Farmington Wild and Scenic River Study

Final Report

May 1995

Prepared by:

Division of Rivers and Special Studies

North Atlantic Regional Office

National Park Service

U.S. Department of the Interior

In cooperation with:

The Farmington River Study Committee

Printed on Recycled Paper

Dedication

I am pleased to dedicate this seminal report to the honored memory of my late colleague, Representative Silvio Conte, who represented the First District of Massachusetts from 1959 to 1991. His tireless efforts to preserve the headwaters of the Farmington River, and his work to protect the Connecticut River and the many other natural resources that bless New England, leave us a legacy of which his family and friends can be proud.

The significance of this report and the underlying study cannot be diminished. Years of effort have gone into this comprehensive endeavor, and the unique, multi-dimensional strategy of protection that it prescribes for the West Branch and main stem of the Farmington River in Connecticut should lead to the successful protection of many other private land rivers. I am proud to have played a role in this project and commend it to you with great satisfaction.

Nancy L. Johnson
Member of Congress
Sixth District — Connecticut

Farmington River Study Committee

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Rodney L. Brown	Massachusetts Dept. of Environmental Management, representing the Governor of Mass. (former member)
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Appendices

Companion Documents

The following documents were prepared and distributed during the Farmington Wild and Scenic River Study. They provide detailed descriptions of specific components of the study, and serve as supporting documents to this report. Copies are available from: Division of Rivers and Special Studies
North Atlantic Region, National Park Service
15 State Street, Boston, MA 02109
(617) 223-5131

- Draft Eligibility and Classification Report (August, 1989)
- Draft Evaluation of Existing Protection (June, 1990)
- An Instream Flow Study of the Mainstem and West Branch of the Farmington River (June, 1992)
- Upper Farmington River Management Plan (April 29, 1993)

Abbreviations and Acronyms

CCC	Civilian Conservation Corps
CEPA	Connecticut Environmental Policy Act
CFR	Code of Federal Regulations
cfs	Cubic feet per second
C.G.S.	Connecticut General Statute
CMR	Code of Massachusetts Regulations
DEM	Massachusetts Department of Environmental Management
DEP	Connecticut Department of Environmental Protection
DOHS	Connecticut Department of Health Services
EA	Environmental Assessment
EIE	Environmental Impact Evaluation
EIR	Environmental Impact Report
ENF	Environmental Notification Form
EOEA	Massachusetts Executive Office of Environmental Affairs
EPA	United States Environmental Protection Agency
FRAA	Farmington River Anglers Association
FRC	Farmington River Club
FRCC	Farmington River Coordinating Committee
FRSC	Farmington River Study Committee
FRWA	Farmington River Watershed Association
FVHD	Farmington Valley Health District
FWS	United States Fish and Wildlife Service
IFIM	Instream Flow Incremental Methodology
IWSP	Individual Water Supply Plan
MassDEP	Massachusetts Department of Environmental Protection
MDC	Hartford Metropolitan District Commission
MEPA	Massachusetts Environmental Policy Act
mgd	Million gallons per day
M.G.L.	Massachusetts General Law
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NPDES	National Pollution Discharge Elimination System
NPS	National Park Service
OPM	Connecticut Office of Policy and Management
P.L.	Public Law
TMA	Trout Management Area
UMass/ WRRC	University of Massachusetts' Water Resources Research Center
USGS	United States Geological Survey
WUA	Weighted Usable Area
WUCC	Water Utility Coordinating Committee

This document presents the results of the Farmington Wild and Scenic River Study, authorized by Public Law 99-590 (October 30, 1986) and encompassing two segments of the upper Farmington River in Massachusetts and Connecticut. The report summarizes the extensive information assembled during the project, the numerous actions taken to protect the river, and the comprehensive management plan that was prepared to ensure the long-term protection of the Connecticut Study Segment. It also presents findings on the eligibility and suitability of the two study segments for National Wild and Scenic River designation, along with the final recommendations regarding designation of each of the segments made by the Farmington River Study Committee, a special advisory committee created by the authorizing legislation.

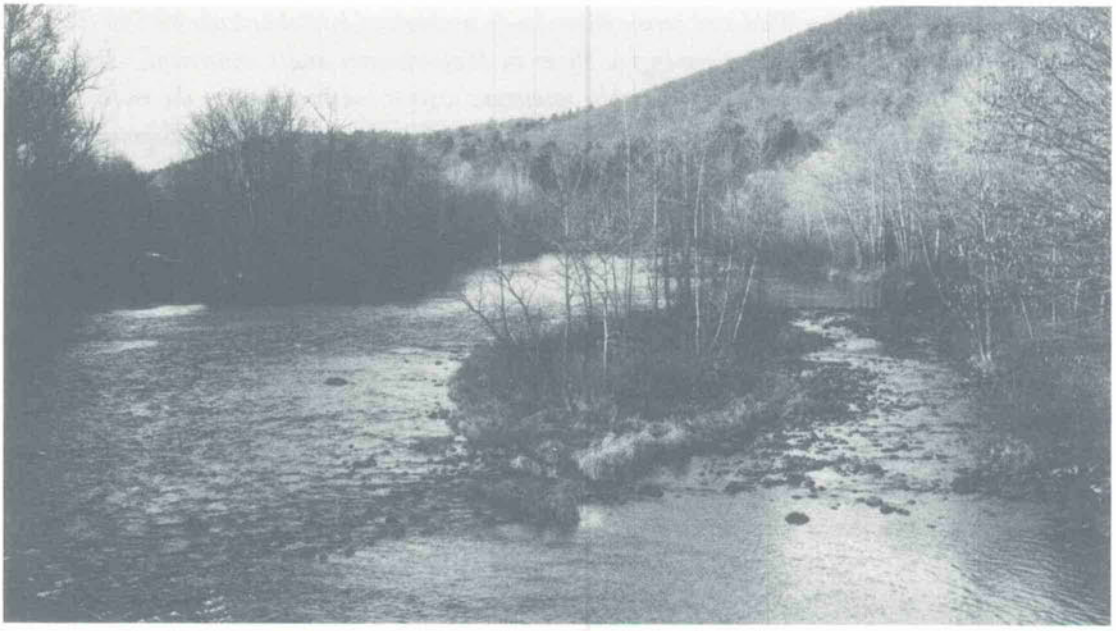
Typically, the study report is prepared prior to a final decision by Congress and the President on whether the river area in question should be designated into the National Wild and Scenic Rivers System. In these instances, the report serves as a tool to assist in the decision-making process. In the case of the Farmington River Study, that normal progression did not occur. While this report was being prepared, legislation to designate the Connecticut Study Segment was passed by Congress and, on August 26, 1994, was signed into law by President Clinton. This document, therefore, is intended primarily to provide a thorough record of the study process, both for those who will be involved in managing the river post-designation and for those on other rivers who may be interested in the Farmington River Study as a model for their own efforts.

Distinguishing Features of the Study Strategy

In response to the particular circumstances of the study area and the history of limited success in applying the Wild and Scenic Rivers Act to rivers flowing through private lands, a nontraditional grassroots strategy was employed for the Farmington River Study. Key elements of that strategy include the following:

- **Bottom-up Planning Guided by a Representative Advisory Committee:** Rather than having federal representatives dominate the study team and planning process, the Farmington River Study Committee was given the lead role. The Study Committee served as the primary decision-maker, and spearheaded an extensive effort to obtain the broadest possible public involvement throughout the project. Staff from the National Park Service (NPS) played a support role, providing technical and administrative assistance and facilitation to the Study Committee.
- **Federal Land Acquisition and Land Management Not an Option:** Because fears of a federal takeover had derailed so many previous efforts to protect private land rivers through Wild and Scenic River designation, federal land acquisition and land management were eliminated from consideration at the outset of the Farmington River Study. Congressional sponsors of the project gave clear guidance on this issue during initial legislative hearings, providing critical reassurance to local residents that the study would not result in an unwanted federal presence in the Farmington Valley.
- Relying on Local, Regional, State and Private Actions to Protect the River Corridor: Instead of the traditional dependence on federal land acquisition as a primary mechanism to protect the river corridor, the Farmington River Study focused on encouraging those who have had long-standing responsibility for management of the corridor — namely, riverfront landowners, the local communities, regional authorities, state agencies, and private organizations — to take the actions needed to ensure compatible management of lands along the river.

  The strong protection from adverse water resource projects available only through Wild and Scenic River designation was used as an incentive to motivate these interests to provide comparably strong protection to the land resources under their jurisdiction. This incentive-based approach contrasts sharply with the threat of potential federal land condemnation that traditionally has been used to motivate local communities along designated private land rivers to provide compatible shorelands management.
- **Implementing Actions to Protect the River During the Study:** In past Wild and Scenic River studies, little effort has been made to pursue implementation of actions to strengthen river protection during the study period. Instead, implementation typically has been left until after designation, when the federal managing agency usually has the authority to acquire land as a way of ensuring protection if the local communities are unwilling or unable to do so themselves. The Farmington River Study reversed that pattern by encouraging the local communities, state agencies, landowners and others to take actions to protect the river during the study, prior to designation.
- **Addressing Resource Allocation Controversies Through Cooperative Scientific Analysis:** In response to a long-standing controversy about the impacts of possible future water supply withdrawals from the river, the Farmington River Study Committee initiated a comprehensive scientific examination of the issue. The resulting "instream flow study" was carried out through an open, cooperative process, and was overseen by a working group with representatives from all of the major interests. In order to maximize objectivity, independent consultants that were agreed to by all members of the working group were hired to perform the study.



A view of the upper Farmington River and surrounding hillsides from the Route 318 bridge in Pleasant Valley, Connecticut.

- **Long-term Management Based on a Cooperative Partnership:** As on most private land rivers, authority over the various aspects of river management on the Farmington River is shared among many different entities, with no single entity playing a truly dominant role. This being the case, the Study Committee recognized that effective long-term management of the river could only be achieved through a cooperative partnership involving all of the major parties with a stake in its future — local and state government, riverfront landowners, regional authorities, private organizations, recreationists, and others. The Study Committee also acknowledged that if the river ultimately was to be designated as a Wild and Scenic River, the federal government would have important responsibilities as a member of that partnership. However, it was agreed that the federal role could not, and should not, be the dominant one of primary manager that had typified most designations over the history of the Wild and Scenic Rivers System.
- **Preparing a River Management Plan During the Study:** In sharp contrast to previous Wild and Scenic River Studies, the Farmington River Study concentrated on the preparation of a comprehensive management plan during the study, prior to a final decision on whether to pursue Wild and Scenic River designation. The number of interests and jurisdictions involved and the firm opposition to a major federal presence made it essential to define up front what the roles, responsibilities, and authorities of the various interests — including the federal government —would be if the river was to be designated. The study participants agreed that, without such an understanding, it would be difficult, if not impossible, to reach consensus on designation. The group also recognized that a comprehensive management plan was needed regardless of whether the river was ever made part of the national system.
- **Local Control in the Final Recommendation Regarding Designation:** One of the most frequent concerns among riverfront communities is that a Wild and Scenic River Study will lead inevitably to designation, even if the local people oppose that outcome. To alleviate this concern, it was made clear from the outset of the Farmington River Study that each of the affected towns would be asked to make a formal decision about designation, and that designation would be recommended to Congress only if the communities supported it.

These principal features of the study strategy are discussed in greater detail in **Sub-Section 1.3.1: Special Considerations for the Farmington River Study**.

Major Accomplishments

Using the nontraditional grassroots strategy described above, the Farmington River Study Committee and the National Park Service worked cooperatively to: (1) evaluate whether the study segments met the requirements for inclusion in the Wild and Scenic Rivers System; (2) develop a river management plan; and (3) determine whether a consensus could be reached about pursuing designation. Over the course of those efforts, remarkable progress was made in resolving controversial river management issues and achieving tangible conservation results. The most significant achievements include:

- **Evaluation of Existing Protection:** To determine what additional actions, if any, might be necessary to ensure compatible management of the river corridor, the Study Committee and the NPS conducted a comprehensive

analysis to determine how well the study segments were protected by preexisting measures. Three primary protection mechanisms were evaluated: (1) the amount of riverfront land protected through public or private conservation ownership; (2) the strength of existing local, state, and federal laws and regulations; and (3) physical characteristics that limit potential development (steep slopes, wetlands, parallel roads, etc.).

The evaluation concluded that the segments were generally well protected, in part because of the large tracts of adjacent public conservation land (particularly along the Connecticut Study Segment). Regulations covering adjacent private lands were found to provide additional strong protection, especially from water quality degradation; however, the natural integrity of the immediate shorelands was determined to be somewhat vulnerable to degradation from inappropriate development.

The complete report of this analysis, entitled the Draft Evaluation of Existing Protection (June, 1990), is published separately as a companion to this report.

- **Local Adoption of Strong Shorelands Zoning Ordinances:** Recognizing the need to provide additional protection to the river's immediate shorelands, all four towns abutting the Connecticut Study Segment (Hartland, Barkhamsted, New Hartford, and Canton) and the Town of Tolland, Massachusetts, each drafted and adopted a local "river protection overlay district." The ordinances adopted by the Connecticut towns prohibit new structures, new septic systems, and sand and gravel extraction within 100 feet of the river, and establish strict limits on vegetation removal in that area. The Tolland bylaw prohibits new structures and sand and gravel extraction within 200 feet of the river or the 100-year floodplain. It also establishes a 50-foot no-cut zone, limits vegetation cutting in the area from 50-200 feet from the river, and requires new septic systems to be setback at least 150 feet.

- **State Land Acquisition**: Both the Commonwealth of Massachusetts and the State of Connecticut acquired critical pieces of riverfront land during the study. The Massachusetts Department of Environmental Management purchased two parcels totalling 467 acres and approximately 8,600 feet of river frontage, for a combined cost of $1.1 million. The Connecticut Department of Environmental Protection also purchased two important parcels, encompassing 123 acres and roughly 3,000 feet of river frontage, at a cost of $325,000.

- **Private Conservation Initiatives:** In addition to local and state actions, private organizations in the Farmington Valley initiated a number of significant efforts to help protect the river:

  ➢ The Farmington River Watershed Association (FRWA) launched a diversified program to stimulate land conservation throughout the Farmington Valley. The program includes: (1) pursuing voluntary conservation of private lands through conservation easements and other options; (2) advocating for and facilitating the public purchase of critical parcels; (3) working with town governments to strengthen local regulatory measures; and (4) participating in the public review of development proposals that could adversely affect the river.

  ➢ Several organizations, including the FRWA, the Farmington River Anglers Association (FRAA), and the Farmington River Club (a boating group), sponsored annual river cleanups as a way to stimulate public participation and achieve on-the-ground improvements to the quality of the river corridor. From 1991 to 1993, the FRWA alone drew a total of almost 1000 people to these events throughout the watershed, about 300 of whom focused their efforts in the Wild and Scenic River Study area.

  ➢ In cooperation with the U.S. Soil Conservation Service and the Town of Barkhamsted, the FRAA initiated a streambank stabilization effort that emphasized revegetation as an alternative to structural techniques.

- **Community Support for Wild and Scenic River Designation:** Given the commitment to local control in the final recommendation about Wild and Scenic River designation, each of the communities in the study area was asked to make a formal decision on the issue. In the long-standing tradition of small-town New England, these decisions were made by the local townspeople at official "town meetings." All five of the Connecticut towns voted overwhelmingly in favor of designation. The three towns bordering the Massachusetts Study Segment also voted to support designation initially, but later rescinded those votes following a rancorous campaign by opponents of designation.

- **Instream Flow Study:** As mentioned previously, the Study Committee initiated a cooperative "instream flow study" in an attempt to resolve the historical controversy over the potential impacts of future water supply withdrawals on the Connecticut portion of the river. The study was designed to provide information on two fundamental questions: (1) What flows are needed to maintain the Farmington River's fisheries, recreation, and scenic values?; and (2) Is there sufficient water in the Farmington basin under different rainfall conditions to allow for limited withdrawals without adversely affecting those resources? Answers to those questions were needed to determine whether any withdrawal could be compatible with Wild and Scenic River designation.

  The Instream Flow Study incorporated a number of important assumptions that must be considered when analyzing its final results. Keeping these assumptions in mind, the study's overall conclusion was that there appears to be sufficient water on an annual basis to provide for all

resource needs and uses, including maintaining historical levels of fisheries habitat and recreational opportunity in conjunction with potential limited withdrawals for water supply. This "win-win" scenario provided the foundation for resolving the intense controversy over potential withdrawals, and created an opportunity to achieve a unanimous consensus of support for Wild and Scenic River designation of the Connecticut Study Segment.

The final report of the Instream Flow Study, entitled An Instream Flow Study of the Mainstem and West Branch of the Farmington River (June, 1992), is published separately as a companion to this report.

- **Completion and Adoption of the Upper Farmington River Management Plan:** The capstone of the study process was the completion and adoption of the Upper Farmington River Management Plan. The Plan, which focuses primarily on the Connecticut Study Segment,* was prepared by the Study Committee with assistance from the National Park Service. It presents a vision for the long-term protection of the river's outstanding values through compatible management of its land and water resources, and is founded on the following principles:

  - ➢ Resource conservation should be fully integrated with traditional patterns of use, ownership, and jurisdiction.
  - ➢ River management should be accomplished through cooperation among all public and private organizations with an interest in the river.
  - ➢ Long-term resource protection should rely on existing programs and authorities rather than on new layers of bureaucracy.
  - ➢ In the implementation of Wild and Scenic River designation, the federal government should act as a partner in river management rather than the primary manager.

  The Management Plan established strong, detailed standards for resource protection, and identified a range of actions — many of which have already been implemented — to achieve those standards. The Plan also established an administrative framework to ensure its implementation, and created the "Farmington River Coordinating Committee" (FRCC) as a successor to the Study Committee. The FRCC's purpose will be to stimulate continued cooperation and coordination among the major players in river management, and to provide a forum for all river interests to discuss and resolve issues.

  In addition, the Plan incorporated several specific provisions designed to safeguard the interests of riverfront landowners and the adjacent communities and to make clear that Wild and Scenic River designation will not result in unwelcome federal control of the Farmington Valley. Those provisions included the following:

  - ➢ There will be no federal land acquisition (through condemnation or otherwise) in conjunction with designation.
  - ➢ There will be no federal management of non-federal lands. Private lands along the river will continue to be managed by their owners in accordance with local land use regulations.
  - ➢ The river area will not become a national park and will not be subject to the federal regulations that govern the national park system.
  - ➢ No new federal permits will be required as a result of designation.

  At its final meeting on April 29, 1993, the Study Committee voted unanimously to "adopt the Upper Farmington River Management Plan as providing a balanced approach to long-term protection and use of the Farmington River." Completion of the Plan marked the first time in the history of the Wild and Scenic Rivers System that a comprehensive management plan had been prepared during the study period, prior to designation. Together with the Instream Flow Study, the development of the Management Plan provided the foundation for achieving a unanimous consensus of support for Wild and Scenic River designation.

  The final version of the Upper Farmington River Management Plan is published separately as a companion to this report.

Principal Findings and Recommendations

Massachusetts Study Segment

Eligibility

The Massachusetts Study Segment was found to be eligible for designation based on its free-flowing condition and its outstanding resource values. These values include recreation (regionally exemplary white water boating opportunities) and wildlife (regionally exemplary peregrine falcon habitat).

Classification

The segment was determined to be appropriate for "recreational" classification due to the level of human activity/development in the river corridor and the accessibility to the river from adjacent roads and bridge crossings.

* The Upper Farmington River Management Plan concentrated on the Connecticut Study Segment because, at the time the Plan was prepared, the Connecticut study towns had demonstrated strong eupport for both river protection and for Wild and Scenic River designation. A comparable amount of time and energy was not expended to prepare a comprehensive management plan for the Massachusetts Study Segment because of the lack of local support in the Massachusetts towns at that time.

Suitability

The Massachusetts Study Segment was found to be not suitable for designation at this time for the following reasons:

- With the exception of Tolland, existing regulations, programs, and other measures do not fully protect the natural integrity of the river's immediate shorelands;
- The three communities (Otis, Sandisfield, and Tolland) that directly abut the segment have not passed town meeting votes supporting Wild and Scenic River designation; and
- No formal management framework currently exists that would bring the major parties with an interest in the Massachusetts segment together to work cooperatively for its long-term protection and management.

The segment could become suitable if these inadequacies are rectified at some point in the future.

Farmington River Study Committee Recommendation on Designation

At its final meeting on April 29, 1993, the Farmington River Study Committee passed by unanimous vote a motion that included the following passage: "...be it resolved...that, in the absence of town votes supporting designation, no action be taken regarding a recommendation for the designation of the Massachusetts section of the river."

Connecticut Study Segment

Eligibility

The Connecticut Study Segment was found to be eligible for designation based on its free-flowing condition and its outstanding resource values. These values include recreation (a regionally unique combination of recreation opportunities), fish (regionally exemplary habitat for trout and Atlantic salmon), wildlife (regionally unique bald eagle habitat), and historic resources (regionally exemplary historic and archaeological sites).

Classification

The segment was determined to be appropriate for "recreational" classification due to the level of human activity/development in the river corridor and the accessibility to the river from adjacent roads and bridge crossings.

Suitability

The Connecticut Study Segment was found to be suitable for Wild and Scenic River designation, without the need for any federal land acquisition or land management. This finding is based on the following:

- **Protection**: The segment is well protected through existing mechanisms, particularly the River Protection Overlay Districts adopted by all four adjacent communities and the high percentage of adjacent public conservation lands;
- **Support**: There is broad-based support for designation among the many parties involved in river use and management;
- **Management**: The Upper Farmington River Management Plan provides a comprehensive framework for the long-term protection and management of the segment; and
- **Effects**: Designation will provide a variety of important benefits, will entail very modest costs relative to those benefits, and will not have significant negative effects.

Among its many values, the Farmington River offers opportunities for solitude, relaxation, and recreation away from the pressures of modern life.

In addition to the overall suitability finding, the study produced three other important findings related to protection and management of the Connecticut Study Segment:

(1) The zoning ordinances — particularly the River Protection Overlay Districts — adopted by the four riverfront towns provide unusually strong and consistent protection for the river and its shorelands. Those ordinances, therefore, satisfy the standards and requirements of Section 6(c) of the Wild and Scenic Rivers Act, which precludes the potential for land condemnation by the federal government in situations where the communities involved have adequate zoning in place to protect the river.

This is the first time in the history of the Wild and Scenic Rivers System that the requirements of Section 6(c) have been met through local zoning ordinances adopted prior to designation.

(2) The Upper Farmington River Management Plan satisfies Section 3(d) of the Wild and Scenic Rivers Act, which requires the preparation of a comprehensive management plan.

This is the first time in the history of the Wild and Scenic Rivers System that the Section 3(d) requirement has been met with a management plan prepared during the study period, prior to designation.

(3) Because the Connecticut Study Segment was found eligible for Wild and Scenic River designation based on the existing flow regime downstream of the Colebrook and Goodwin Dams and Hydroelectric Projects, the continued operation of those facilities is compatible with the protection of the river and with designation.

Farmington River Study Committee Recommendation on Designation

At its final meeting on April 29, 1993, the Farmington River Study Committee passed by unanimous vote a motion that included the following passage:

> Be it resolved that: The Farmington River Study Committee recommend to the United States Congress that the Farmington River, from immediately below the Goodwin Dam and Hydroelectric Project in Hartland, Connecticut to the downstream end of the New Hartford/ Canton, Connecticut town line, be designated into the National Wild and Scenic Rivers System in accordance with the spirit and provisions of the Upper Farmington River Management Plan.

Designation of the Connecticut Segment

Following completion of the Upper Farmington River Management Plan and the Study Committee's vote recommending designation of the Connecticut Study Segment, Congresswoman Nancy Johnson and Senator Joseph Lieberman of Connecticut introduced legislation in their respective chambers of Congress to designate the river. After hearings before the relevant subcommittees, an amended version of the bill was passed by both the House of Representatives and the Senate. On August 26, 1994, President Clinton signed Public Law 103-313, designating the upper Farmington River in Connecticut into the National Wild and Scenic Rivers System. The legislation cements the grassroots principles upon which the study and the Management Plan were founded, and ensures that the interests of the many parties that share a stake in the future of the river will be fully integrated in the implementation of designation.

Organization of this Report

Chapter 1 provides background on the Wild and Scenic Rivers Act and the Farmington River Study.

Chapter 2 contains a description of the character and resources of the Farmington River study segments and the surrounding area.

Chapter 3 presents the methodology and findings of the eligibility and classification analyses, two of the formal requirements of the study process.

Chapter 4 summarizes the many laws, regulations, programs, agreements, and physical characteristics that currently affect the management and protection of the two study segments.

Chapter 5 describes two important water resources studies that were conducted: a review of the future water supply needs of the greater Hartford, Connecticut area; and the comprehensive "instream flow study" of the study segments.

Chapter 6 discusses the extent of support demonstrated during the project for Wild and Scenic River designation of each of the study segments.

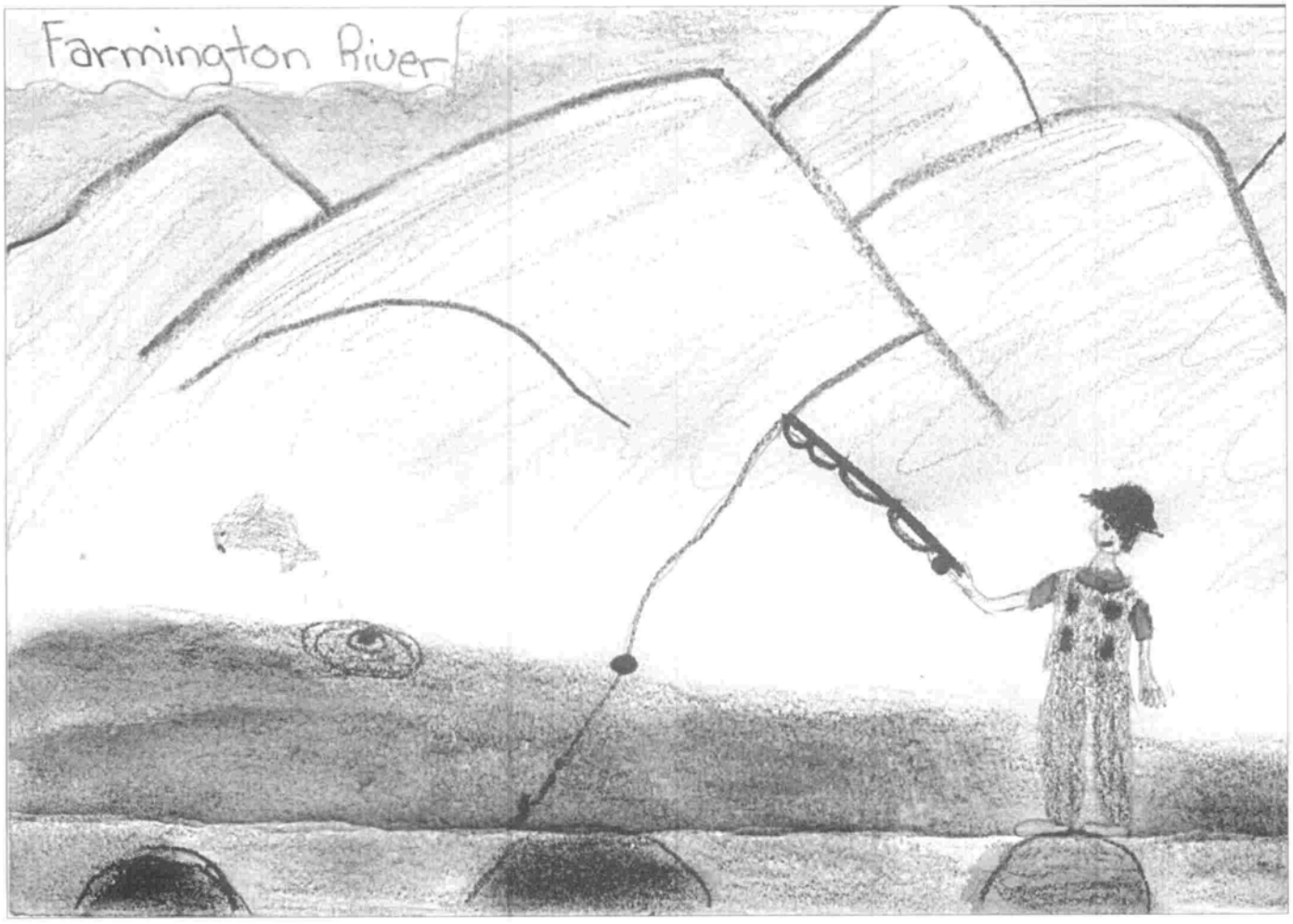
Chapter 7 provides a summary of the Upper Farmington River Management Plan, the comprehensive river management plan for the Connecticut Study Segment that was prepared in the latter stages of the study.

Chapter 8 presents the methodology and findings of the suitability analysis, the other formal requirement of the study process.

Chapter 9 recaps the study's major findings, presents the final recommendations of the Farmington River Study Committee, and provides general recommendations regarding future management of the river.

The "Postscript" summarizes the legislative process that culminated with the designation of the Connecticut Study Segment into the National Wild and Scenic Rivers System.

The report ends with a list of references, acknowledgments, and appendices, which present background information related to various aspects of the project.



Chapter 1: Introduction and Background

Drawings and writings about the Farmington River shown on the chapter dividers throughout this report are courtesy of the 1990-91 fifth grade class of the Barkhamsted Elementary School.

Everyday many people use the Farmington River for tubing canoeing fishing and many other things. The Farmington River means alot to the people of Barkhamsted. The water in the river is not polluted and its not crystal clear either, but I think you get the picture. The Farmington River is an important part of the people in Barkhamsted and Barkhamsted itself.

Mandie Maher

This chapter provides an introduction to the Wild and Scenic Rivers Act and the Farmington River Study. It includes a review of the project's history, the study strategy and process, the principal participants, the major issues identified at the project's outset, and the broad goals that were developed to guide the effort.

1.1 Background on the Wild and Scenic Rivers Act

1.1.1 History and Policy

Enacted in 1968, the National Wild and Scenic Rivers Act (P.L. 90-542, as amended) was created to balance long-standing federal policies promoting construction of dams, levees, and other river development projects with one that would permanently preserve selected rivers, or river segments, in their free-flowing condition. Section 1(b) of the Act states:

> It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations.

The original Act designated eight rivers into the National Wild and Scenic Rivers System, and specified two processes by which other rivers could be added to the system. The more frequently used of these involves a legislative designation through an Act of Congress, often following a formal study process that is also authorized by Congress. The second approach involves an administrative designation by the Secretary of the Interior, following a formal application for designation from the governor of the state through which the river flows and provided that the state has already included the river in its own protected rivers system. The study and designation process used for the Farmington River is an example of the former — that is, the legislative or "congressional" route.

As of December, 1994, one hundred fifty rivers or river segments totalling 10,734 miles had been included in the national system. Of the designated segments, only three in addition to the Farmington are located in New England: the Allagash in Maine; the Wildcat in New Hampshire; and the Westfield in Massachusetts.

Each river designated into the national system receives permanent protection from federally licensed or assisted dams, diversions, channelizations and other water projects that would have a direct and adverse effect on its free-flowing condition and special resources.[1] The Wild and Scenic Rivers Act explicitly prohibits any new dam or other project licensed by the Federal Energy Regulatory Commission (FERC) on or directly affecting a designated river segment, and requires that all other proposed federally assisted water projects in the area be evaluated for their potential impacts on the river's special features. Any project that would result in adverse effects to the designated segment is precluded under the Act.

This same protection is provided on a temporary basis for rivers that are under formal, legislatively authorized study for potential addition to the national system. The interim protection remains in place from the date of study authorization until Congress makes a decision on whether or not to designate the river into the national system, or until three years after a final study report is transmitted to Congress by the President, whichever comes first.

1.1.2 Requirements for Designation

For a river to be designated into the National Wild and Scenic Rivers System, it must be found both "eligible" and "suitable." To be eligible, the river must be free-flowing and possess at least one "outstandingly remarkable"[2] resource value, such as high quality scenic values, recreational opportunities, geologic features, fisheries and wildlife, historic sites or cultural resources. Rivers that are found eligible then are given a proposed classification as either "wild," "scenic," or "recreational," depending on the amount of development and human presence along the river.

Determining whether a river is suitable for designation is more complicated than the relatively straightforward resource assessment required to evaluate eligibility. Essentially, suitability is an evaluation of first, whether an eligible river would be an appropriate addition to the national system, and second, whether Wild and Scenic designation is an appropriate element of long-term management for the river. In other words, does Wild and Scenic designation make sense for the river in question? For rivers flowing through predominantly private lands and for which federal land acquisition and land management are not envisioned as part of the long-term management scenario, there are several distinct issues that must be addressed in the suitability analysis. These include:

- **Protection:** Are there adequate mechanisms in place to provide lasting protection for the river's outstanding values without the need for federal land acquisition and management (if those existing mechanisms are complemented by the instream protection provided by Wild and Scenic River designation)? These protective mechanisms may in-

[1] The term "federally assisted" includes projects requiring any type of license, permit, grant, loan, or other assistance from the federal government.

[2] Rather than repeat this legal phrase throughout the text, we will simply use the term "outstanding."

clude local, state, and federal laws and regulations; land owned by individuals, governmental bodies or private organizations that is legally dedicated for conservation purposes; and either natural limitations (e.g., adjacent wetlands or steep slopes) or man-made features (e.g., roads and railroad corridors) that create physical barriers to shoreland development.

- **Support**: Is there demonstrated support for river protection and for Wild and Scenic designation, as well as a commitment to participate in long-term management, among the major river interests (e.g., adjacent communities, state government, elected officials, conservation organizations, regional authorities, and river users)?
- **Management**: Is there an existing or proposed management framework that will bring those key river interests together to work toward the ongoing protection of the river?
- **Effects**: What would the effects of designation be? Or, more specifically: What uses of the associated land and water base could be enhanced, foreclosed, or curtailed with designation? What would the costs of designation be, particularly to the local, state, and federal governments? Would designation provide clearly definable public benefits? Is the protection afforded by designation needed, or are there other ways to protect the river that might be more appropriate? Would designation have any significant negative effects?

The requirements and criteria for eligibility and suitability are described in greater detail in **Chapter 3: Eligibility and Classification**, and **Chapter 8: Suitability**.

1.1.3 Using the Act to Protect Rivers on Private Lands

The Wild and Scenic Rivers Act was initially envisioned primarily as a tool to protect outstanding rivers on public lands in the western United States. Prior to its enactment, however, there was a recognition in Congress that the system should be broad and flexible enough to include rivers flowing through private lands, as do most streams in the East and certain other parts of the country. Thus, when the Act was passed in 1968, it included provisions designed to accommodate so-called "private land rivers."

Yet in the twenty-six years since its establishment, the Wild and Scenic Rivers System has had only limited success in protecting private land rivers. Of the one hundred fifty rivers designated into the national system, fewer than twenty are bordered predominantly by private lands. Many other outstanding private land rivers have been studied and found eligible for federal protection, but have not been designated. Still others have not even reached the study stage. There are a number of factors that have contributed to this poor track record, but the overriding one is the recurrent concern of landowners and local residents that designation may result in heavy-handed federal control or an actual takeover of the river corridor.

Despite that troubled history, encouraging progress has been made in recent years in the Northeast. Beginning with the study and designation of New Hampshire's Wildcat River in 1988, a nontraditional grassroots approach to the study process began to emerge that responded to the often-encountered local concerns. This strategy continued to evolve in the studies of New Jersey's Great Egg Harbor and Maurice Rivers, which were designated in 1992 and 1993, respectively.

The Farmington River Study represents the next step in the evolution of this new, nontraditional approach to the study and designation process. As in the successful precedents mentioned above, the strategy used on the Farmington was based on the recognition that private land rivers involve different challenges than public land rivers, and therefore require a fundamentally different approach. The specific features that distinguish the Farmington strategy are described in detail in **Section 1.3: Study Strategy and Process.**

1.2 Background on the Farmington River Study

1.2.1 Study Authorization

Local interest in a Wild and Scenic River Study of the Farmington River began in the early 1980's, when the Hartford Metropolitan District Commission, or MDC, (the utility that supplies water to about 400,000 people in the greater Hartford area) proposed a diversion from existing reservoirs on the river's West Branch to augment their supply. Local residents and town officials in the river valley and the Farmington River Watershed Association (FRWA) expressed concern that the proposed withdrawal would impact the river's special resources, particularly its fisheries, canoeing, kayaking, and scenic values. The diversion proposal was rejected in a 1981 referendum of the MDC's member towns, but anxiety about the project lingered in the Farmington Valley. At the same time, many residents of the area were becoming alarmed by the increasing rate of development along the river's banks and the potential threat that continued shoreline development could pose to the natural integrity of the river area.

In an attempt to address these concerns, the FRWA and towns along the river requested assistance from the National Park Service (NPS) in 1982 to evaluate the significance of the river's resources and recommend strategies for conserving and managing the river. The FRWA, the NPS, and the Connecticut Department of Environmental Protection (DEP) subsequently collaborated on a yearlong reconnaissance study of the river. That effort, summarized in the Farmington River Study Final Report (1984), concluded that (1) the Farmington River possessed a variety of significant resources, and (2) both local residents and government officials were concerned about conserving the quality of the river for the future. The report's principal recommendation was to develop a management plan that would "establish a regional cooperative partnership between

Despite its proximity to major population centers of the Northeast, the Farmington River corridor retains a largely undeveloped, natural character.

all levels of government and private groups and individuals to develop explicit and integrated policies for the future use and management of the Farmington River corridor."

As a result of that study and growing interest in adding federal protection to local and state efforts to protect the river, Connecticut Congresswoman Nancy Johnson introduced legislation in 1984 to have the West Branch of the Farmington studied for potential inclusion in the National Wild and Scenic Rivers System. The legislation was intended not only to initiate an evaluation of whether the river would qualify for national designation, but also to stimulate a cooperative planning process among all river interests to conserve the river's critical resources.

On October 30, 1986, the Farmington Wild and Scenic River Study Act (P.L. 99-590) was signed into law, authorizing the study of two segments of the upper Farmington River: an 11-mile stretch of the West Branch in Massachusetts, extending from Hayden Pond in Otis downstream to the confluence with Thorp Brook in Sandisfield;[3] and a 14-mile stretch of the West Branch and mainstem in Connecticut, extending from the base of the Goodwin Dam in Hartland downstream to the southern extent of the New Hartford/Canton town line. (**See Map 1-1.**) The authorizing legislation is included in **Appendix A.**

1.2.2 The Farmington River Study Committee

In authorizing the study, Congress recognized that a wide range of interests shared a stake in the future of the Farmington and needed to be directly involved in the project. As a result, Congress created a special advisory committee, the Farmington River Study Committee, to represent those varied interests and to work with the National Park Service in conducting the study. The Study Committee consisted of seventeen members, including representatives of the eight towns bordering the two study segments,[4] the Farmington River Watershed Association, the Hartford Metropolitan District Commission, the Commonwealth of Massachusetts, the State of Connecticut, and the Secretary of the Interior.

Early on, the Study Committee decided to channel the bulk of its work into three subcommittees:

(1) The **River Eligibility Subcommittee**, which assisted the National Park Service in reviewing draft eligibility and classification findings and in determining whether each study segment was eligible for Wild and Scenic River designation.

(2) The **Water Resources Subcommittee**, which focused on water quality and quantity issues, and the development of management recommendations concerning those issues.

(3) The **River Conservation Planning and Public Involvement Subcommittee**, which concentrated on evaluating issues and developing recommendations related to the management of river corridor lands and river recreation. Because public involvement was recognized as being crucial to the success of the study, this subcommittee also developed and implemented strategies to involve the public in all phases of the process.

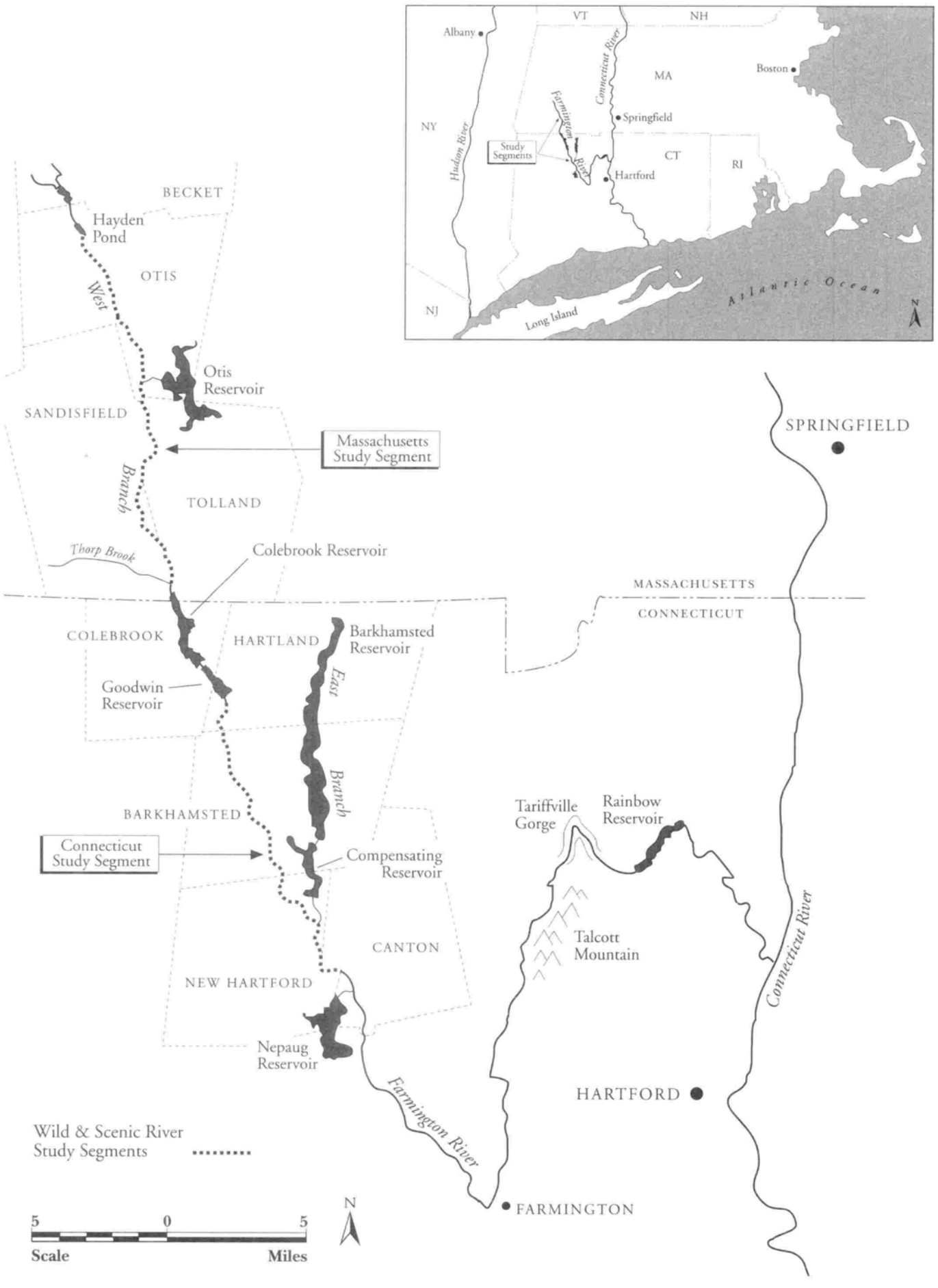
The Study Committee also established working groups to address certain technical issues. These groups, which generally consisted of staff members from several of the principal organizations involved in the project, provided analysis and recommendations for the consideration of the appropriate subcommittees and/or the full Committee.

The whole Study Committee met regularly (on average five times per year) from its first meeting in November, 1988 until May, 1992, with a final meeting in April, 1993. Subcommittee meetings were held as needed, with most meetings taking place during the first two years and the final year of the Committee's efforts.

[3] Subsequent analysis revealed that the Massachusetts segment is actually closer to 14 miles long.

[4] The Study Committee included representatives from the Massachusetts towns of Becket, Otis, Sandisfield, and Tolland, and the Connecticut towns of Colebrook, Hartland, Barkhamsted, and New Hartford. The Town of Canton, which abuts the lower end of the Connecticut segment, was not officially included in the Study Committee in the authorizing legislation. However, on Canton's request, the Study Committee voted unanimously to add an unofficial representative of the town to its membership. The Town was an active and important participant throughout the study.

Map 1-1: The Farmington Wild and Scenic River Study Area



The Study Committee and its working groups proved to be the crucial element in the study process. The Committee members, most of whom were volunteers, applied themselves to the project with dedication, energy and creativity for nearly six years. During that time, they were able to overcome antagonisms resulting from earlier controversies and work together — with each representing his or her own perspective and interest — to pursue improved protection for the river and mutually beneficial solutions to existing management issues. Without the Study Committee, the many accomplishments achieved during the study would not have occurred.

The Farmington River Study Committee — shown here at one of its many public meetings — was the focal point of the study process.

1.2.3 Role of the National Park Service

The National Park Service was assigned by Congress to be the federal agency responsible for coordinating the Farmington River Study and preparing a final report. As a federal agency with no specific ties to the Farmington River, the Park Service was expected to perform two principal functions: first, to conduct an objective analysis of the river's eligibility and suitability for Wild and Scenic River designation; and second, to act as a catalyst in bringing together the major river interests to plan for the river's future. In doing this, the NPS relied on the Farmington River Study Committee for overall guidance and leadership. Thus, the Park Service's primary role was to provide technical assistance, staff support, and facilitation to the Study Committee and the interests represented on it.

1.3 Study Strategy and Process

1.3.1 Special Considerations for the Farmington River Study

Because of both the unique circumstances of the Farmington River Valley and the troubled history of the Wild and Scenic Rivers System on private land rivers, the study process was tailored to incorporate a number of special considerations. The most significant of these are described below.

- **Strong Emphasis on Public Involvement:** Because of the broad range of individuals, organizations, and governmental bodies that share a stake in future of the Farmington River, an extensive public involvement program was developed as the cornerstone to the study process. In addition to being represented on the Farmington River Study Committee, the public was encouraged to participate in every aspect of the study through a variety of techniques:
  - All meetings of the Farmington River Study Committee and its subcommittees were publicly advertised and open to public participation. These meetings were held at a variety of locations throughout the study area.
  - Meeting notices and minutes of all Study Committee meetings were mailed to more than 500 individuals and groups.
  - Town representatives on the Study Committee met frequently with elected and appointed officials from their communities to keep them informed about the project and seek their input.
  - Several of the local representatives submitted written updates on the project to community newsletters.
  - Study Committee members and project staff communicated frequently with reporters from the local and regional media in order to ensure accurate and ongoing coverage of the study.
  - Two informational newsletters were published and distributed widely to interested parties.
  - A series of four issue-identification workshops and a water management workshop were held to solicit direct public input early in the planning process.
  - A three-part question-and-answer handout and a landowner and resident questionnaire were mailed to all 11,000 residents of the nine towns in the study area.
  - A letter explaining the effects of Wild and Scenic River designation was sent to all voters in the three towns that directly abut the Massachusetts Study Segment.
  - A major public forum, attended by more than 200 people, was held near the end of the study to present the proposed river management plan and receive comments from the public on it.
  - Many other mailings, meetings, presentations and events were initiated to keep the public informed and actively involved throughout the study.
- **No Consideration of Federal Land Acquisition or Land Management:** In her testimony supporting the original study legislation for the Farmington River, Connecticut Congresswoman Nancy Johnson stated that "the traditional approach to river conservation, in which government acquisition and management of land are primary techniques, is not appropriate on the West Branch. Federal

land acquisition is not envisioned as a part of the wild and scenic program in this case. The river management plan should rely on existing local land use controls, state authorities, and voluntary private sector and landowner actions."[5] Former Connecticut Senator Lowell Weicker, Jr., who sponsored the study legislation in the U.S. Senate, provided similar direction in his testimony.

The statements of Congresswoman Johnson and Senator Weicker directly reflected both the predominance of private land ownership and the strong traditions of home rule and local control over land use that exist in the Farmington Valley towns, as well as elsewhere in New England. There is virtually no existing federal land abutting the Farmington River Study Segments,[6] and local residents expressed strong opposition to any new federal land acquisition or control over the Farmington Valley that might result from the Wild and Scenic River Study and potential designation.

In response to those local concerns and the strong guidance from Congresswoman Johnson and Senator Weicker, federal land acquisition and management were not considered as possible conservation techniques for the Farmington. Instead, the study focused on using private, local and state actions to ensure the compatible management of river corridor lands.

The same local concerns have created considerable controversy on a number of other northeastern "private land rivers" that have been considered for Wild and Scenic designation in the past twenty years. Several rivers (for instance, the Housatonic and Shepaug in Connecticut, the Penobscot in Maine, and Fish Creek in New York) were found to be eligible for federal protection, but none were designated because of a lack of local political support stemming from the fear of federal land condemnation and loss of local control. On other private land rivers that did receive designation from Congress — most notably the Upper Delaware in New York and Pennsylvania — local concerns about the potential for federal land acquisition and top-down management after designation resulted in protracted and contentious efforts to prepare a management plan that all parties ultimately could accept.

The approach used in the Farmington River Study — eliminating any consideration of federal land acquisition and management from the process — evolved specifically in response to that problematic history.

- **Reliance on Local, Regional, State and Private Actions to Protect the River Corridor:** Instead of the traditional dependence on federal land acquisition as a primary mechanism to protect the river corridor, the Farmington River Study focused on encouraging those who have had long-standing responsibility for management of the corridor—namely, riverfront landowners, the local communities, regional authorities, state agencies, and private organizations—to take the actions needed to ensure compatible management of lands along the river.

  The strong protection from adverse water resource projects available only through Wild and Scenic River designation was used as incentive to motivate these interests to provide comparably strong protection to the land resources under their jurisdiction. This incentive-based approach contrasts sharply with the threat of potential federal land condemnation that traditionally has been used to motivate local communities along designated private land rivers to provide compatible shorelands management.

  The reliance on non-federal actions and local stewardship to provide the necessary protection for the river corridor was a central element of the project's "bottom-up" philosophy.

- **Implementation of River Conservation Actions During the Study:** In the past Wild and Scenic River studies, little effort has been made to pursue implementation of actions to strengthen river protection during the study period. Instead, implementation typically has been left until after designation, when the federal managing agency usually has the authority to acquire land as a way of ensuring protection if the local communities are unwilling or unable to do so themselves. This has often resulted in a threatening, adversarial relationship between the managing agency and the local communities.

  The Farmington River Study reversed that pattern by encouraging the riverfront communities, state agencies, riparian landowners, and private groups to take actions to strengthen protection for the river during the study period. The specific actions ultimately pursued were selected after a thorough evaluation of the adequacy of existing protection measures and a review of alternative protection methods that had been used successfully on other rivers.

  This approach was designed to achieve three principal objectives:

  (1) it would improve protection for the river, regardless of the ultimate decision on Wild and Scenic River designation;

  (2) the additional protection would be an important component in making the river suitable for Wild and Scenic designation, thereby keeping the option to pursue designation available to the riverfront communities and other study participants; and

  (3) achieving the necessary protection during the study would give the communities a full understanding of

[5] Testimony of Congresswoman Nancy L. Johnson before the U.S. House of Representatives' Subcommittee on National Parks and Recreation, October 4, 1985.

[6] The only exception is a small strip of Army Corps of Engineers land above Colebrook Reservoir in Massachusetts.

the commitments they would be expected to maintain before making a decision on designation.

A description of the specific conservation actions that were implemented over the course of the study is provided in **Chapter 4: Resource Management and Protection.**

- **Special Water Resources Studies:** Because of the long-standing concerns about possible future water supply withdrawals from existing reservoirs on the Farmington's West Branch in Connecticut, two special assessments of water needs were initiated:

  (1) Information was gathered and analyzed regarding the future water supply needs of the greater Hartford area and the likelihood of withdrawals from the West Branch ever being needed to augment existing sources of supply. This evaluation, which was requested by Congress in the House of Representatives' Committee Report that accompanied the study legislation, focused on the Hartford Metropolitan District Commission's long-range water supply planning documents.

  (2) A comprehensive "instream flow study" was conducted to provide information on two fundamental questions:

  First, what river flows are needed to maintain the Farmington's fisheries, recreation, and scenic resources?; and

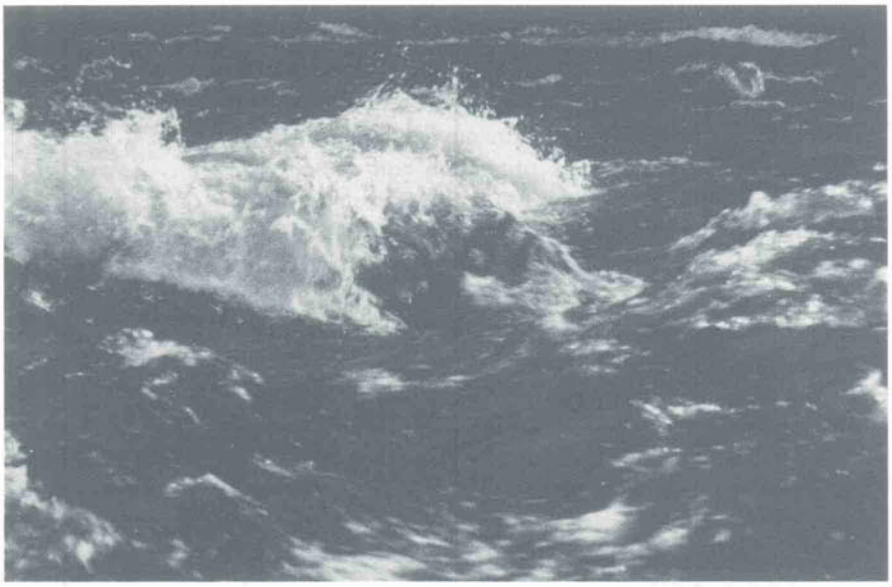
  Second, is there sufficient water in the West Branch under different rainfall conditions to allow for withdrawals without adversely affecting those resources?

  The study participants recognized that answers to those two questions were critical both for long-term management of the river and, more immediately, to determine whether any future withdrawal could theoretically be compatible with Wild and Scenic River designation.

  These elements of the study are described in greater detail in **Chapter 5: Water Resources Studies.**

- **Long-term Management Based on a Cooperative Partnership:** As on most private land rivers, authority over the various aspects of river management on the Farmington River is shared among many different entities, with no single entity playing a truly dominant role. This being the case, the Study Committee recognized that effective long-term management of the river could only be achieved through a cooperative partnership involving all of the major parties with a stake in its future - local and state government, riverfront landowners, the FRWA, the MDC, recreationists, and other river interests.

  The Study Committee also acknowledged that if the river ultimately was to be designated as a Wild and Scenic River, the federal government would have important responsibilities as a member of that partnership (for instance, in implementing the protections against adverse water resources projects provided by the Wild and Scenic Rivers Act, and providing technical and financial assistance). However, it was agreed that the federal role could not, and should not, be the dominant one of primary manager that had typified most designations over the 25-year history of the Wild and Scenic Rivers System.



In order to address long-standing questions about the effects of potential water withdrawals, the Study Committee initiated a detailed analysis of the river flows needed to maintain the Farmington's fisheries, recreation, and scenic resources.

- **Preparation of a River Management Plan <u>During</u> the Study:** The central focus of the Farmington River Study was to develop a river management plan that would identify a long-term strategy for protecting the river's critical resources and clearly define the roles, responsibilities, and authorities of the various river interests. Traditionally, a river management plan is prepared after Wild and Scenic River designation is granted. For the Farmington, however, study participants concluded that it would be impossible to make a final decision on designation without knowing beforehand how the river would be managed following designation. Furthermore, the participants agreed that a management plan was needed regardless of whether the river was ever designated.

  The Farmington River Study represents the first time in the history of the National Wild and Scenic Rivers System that a comprehensive management plan has been prepared prior to designation of the river in question. A summary of the Farmington's final plan, which is entitled <u>The Upper Farmington River Management Plan</u>, is provided

in **Chapter 7**. The full Management Plan is published separately as a companion to this report.

- **Local Control in the Final Study Outcome:** For a river such as the Farmington that is surrounded predominantly by private lands and where protection and compatible management of those private river corridor lands are to be achieved through the actions of landowners and local government rather than through federal acquisition and management, strong local support for Wild and Scenic River designation is essential. As a result, each of the towns in the study area was asked to make a formal decision through a town meeting vote to determine whether the community supported Wild and Scenic designation. The National Park Service and the Farmington River Study Committee reiterated throughout the study that they would recommend designation for each of the study segments only if there was a clear indication of local support through those town meeting votes.

  The results of town meeting votes that were held in each of the study area communities are presented in **Chapter 6: Support for River Protection and Designation**. The outcomes are reflected directly in the suitability findings for each of the study segments (see **Chapter 8: Suitability**), and in the Farmington River Study Committee's final recommendations on designation (see **Chapter 9: Conclusion**).

1.3.2 Tasks Accomplished During the Study

Over the course of the project, the Study Committee and the National Park Service accomplished the following tasks:

* Identified key issues and threats facing the river;
* Established goals for the study process and the river management plan;
* Assessed river resources to determine eligibility for Wild and Scenic River designation;
* Evaluated existing protection for the river;
* Reviewed alternative methods for protecting the river through private, local and state actions;
* Assessed water supply needs of the greater Hartford area;
* Assessed resident and landowner attitudes about the river and possible methods to protect it;
* Requested each town in the study area to provide evidence of local attitudes regarding Wild and Scenic River designation through formal town meeting votes;
* Encouraged the riverfront towns, along with landowners, private organizations and the states, to implement specific actions to provide stronger protection for the river;
* Assisted in the initiation of a private-land protection program designed to facilitate the voluntary donation of conservation easements along the river;
* Conducted an instream flow study to determine the flows necessary to sustain the river's fisheries, recreation, and scenic values, and to evaluate whether sufficient water exists to maintain those values while allowing for specified levels of withdrawal for water supply;
* Developed a comprehensive river management plan to provide for the long-term protection and balanced management of the Connecticut Study Segment; and
* Prepared this study report, which summarizes the results of all of these tasks and presents findings on the Farmington's eligibility and suitability for Wild and Scenic River designation.

Each of the steps listed above included appropriate public outreach activities to encourage the broadest possible participation by interested individuals and organizations.

1.4 Issues and Goals

The first major tasks of the Study Committee were to identify the key issues associated with the Farmington River, and then to develop goals for the study process and the conservation and management of the river that would address those issues. These issues and goals provided the context for conducting all subsequent study components.

1.4.1 Issues

In the spring of 1989, the Study Committee and the National Park Service sponsored four workshops throughout the study area to identify key issues related to the river and the study. Nearly 200 people attended the workshops and identified over 145 issues. The issues identified most frequently are summarized below.

Committee members solicit public input at one of four workshops held to identify key issues affecting the river.

One of the most frequently identified issues was the need for additional management of increasing recreational use on the river.

- **River Corridor Management**: The predominant issue from the workshops was concern about impacts of the study and potential Wild and Scenic River designation on private landowners. Questions focused on the perceived threat of land acquisition; restrictions on land use; effects on property values, taxes, and sales; and concerns about public access and trespass. Many people wondered who would have long-term management authority and responsibility for implementing the river management plan, and emphasized the need to maintain local autonomy in managing land use and growth. Several people noted the critical role of adjacent landowners in protecting the river, and suggested using incentives to encourage landowners to protect open space through private conservation measures.

  Participants also questioned whether existing regulations and enforcement were providing adequate protection to the river. They felt that inconsistent regulations between neighboring towns and a lack of cooperation at all levels of government were magnifying this problem. They also suggested that local communities might not have the information, planning experience, and funding necessary to cope with the development pressures that were evolving along the river.

- **Water Quality and Quantity:** Attendees identified a wide range of concerns about water quality, including sand and salt runoff from Route 8 in Massachusetts, non-point source pollution from adjacent developments and agricultural lands, pollution of groundwater along the river, and sewage impacts on the mainstem and tributaries. Concern also was expressed about the possibility of a hazardous waste spill on Route 8 in Massachusetts. Questions were raised about existing and future water quality monitoring, and whether designation would limit future licensing of sewage treatment plants, thereby restricting development.

  Possible diversions from the river and the need to maintain adequate flows for fisheries, recreation, scenic qualities, and adjacent aquifer recharge were a predominant concern throughout the four workshops. Several people felt that guaranteed flows should be provided for downstream users in both states. In addition, many Massachusetts residents did not want future dams and hydroelectric development that would affect flows in the West Branch or its tributaries.

- **Recreation:** Participants described problems associated with current recreational use of the river, including traffic, parking, litter, trespassing, vandalism, noise, overcrowding, and conflicts between recreationists (e.g., between boaters and fishermen, fishermen and tubers, etc.). A general need was expressed for both proper recreational access points and better management of the rising numbers of people using the river. Many feared that increased recreational use could intensify the existing problems, further degrade the river and its related resources, and burden town and state support services. Some questioned whether designation would generate increased river recreation.

- **Land Use:** Many workshop attendees expressed concern about incremental development and unsightly land use practices degrading the natural character of the river. Parking along Route 8 in Massachusetts and sand and gravel operations in both states were identified as specific problems. Several people favored increased restrictions on timber harvesting, but others felt a need for fewer regulations. Some were curious about the effect the study and potential designation would have on lands adjacent to tributaries, and whether designation would limit the towns' ability to grow.
- **Resource Protection:** Fish and wildlife were highlighted as critical resources needing protection, and many questioned the impact future development along the mainstem and tributaries would have on these resources. A particularly strong desire was expressed to protect the river's outstanding trout and salmon values. Many supported "catch and release" areas as an effective fisheries management tool. Several people identified a need for further protection of wetlands, while others emphasized the preservation of historic structures and the scenic character of the river corridor. There was also recognition that protecting the river's natural resources is essential for the economic health of the Farmington Valley.
- **Public Awareness and Education about the Study:** Much of the discussion at the workshops centered on general questions about the study, including: the process; the restrictions of the Wild and Scenic Rivers Act; relationships among the Study Committee, the towns, the states, and the federal government; the boundaries of the study area and management boundaries associated with designation; and the types of local actions necessary to protect the river and make it suitable for designation. There was general agreement that the Study Committee and the National Park Service needed to increase awareness and education about the study through outreach to landowners, local groups and schools, and through increased publicity of Committee meetings and activities. Participants stressed that the issues identified by the public at the workshops needed to be followed up on in the ensuing phases of the study.

1.4.2 Goals

Based on the issues identified at the public workshops, the Farmington River Study Committee adopted the following set of goals for the study process and for the conservation and management of the two study segments:

Overall Priorities:

➢ Increase public awareness of the study process, and encourage broad participation in the development of the Farmington River Management Plan.

➢ Determine the quantity and quality of water needed in the Farmington River to preserve its recreation, fisheries and scenic qualities.

Study Goals:

Develop a River Management Plan that will do the following:

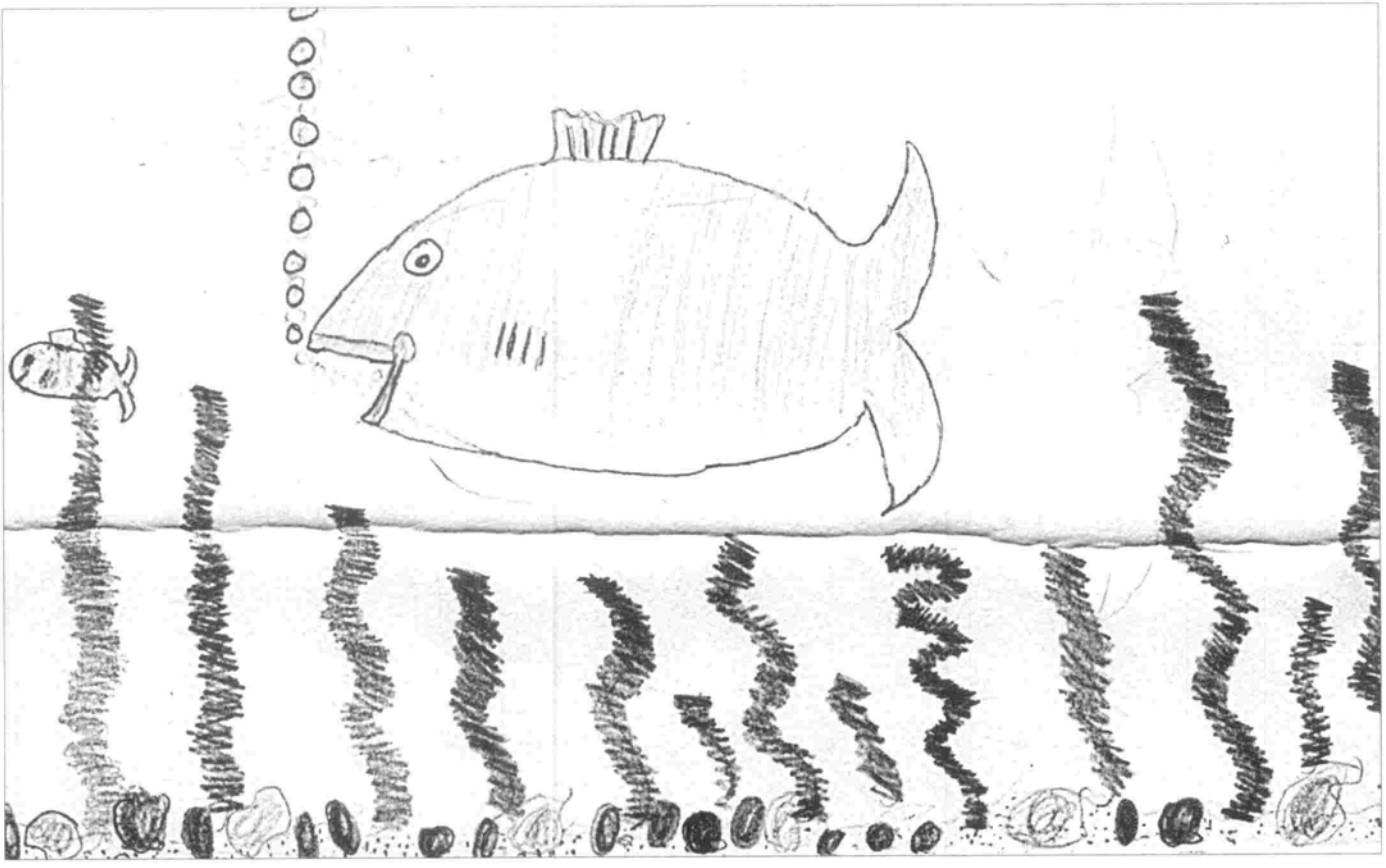
(1) Conserve and enhance important land-based natural and cultural resources, including wildlife habitat, forests, diverse landscapes, and the scenic and historic character of the Farmington Valley;

(2) Encourage effective management of river-related growth that will protect the river's special qualities, and that will emphasize existing local control and the rights of private property owners;

(3) Manage river recreation to minimize resource degradation and impacts on private and public landowners, while providing for appropriate recreational use and public access;

(4) Balance the legitimate demands on the river for water supply, waste assimilation, energy production, and commercial and industrial uses, while maintaining stream flow and water quality necessary to sustain fisheries, recreation and scenic qualities at levels sufficient for potential Wild and Scenic designation.

These goals provided the philosophical foundation for the Study Committee's efforts throughout the remainder of the project.



Chapter 2: Description of the Study Area

One day we were going to the Riverton Ball field. On the way to the field we passed the Farmington River. As we went by three or four cars were parked near the river. We went over to see what was happening. Well we stepped out of the car and saw a fisherman pulling in a huge rainbow trout. We stood there for about five minutes watching him pull in the beautiful fish from the Farmington River. It was fabulous to see the fish and try to fight the fisherman's line. After a while the man lifted the fish out of the River for all the people to see. Everybody cheered and clapped for the catching of the enormous Rainbow Trout.

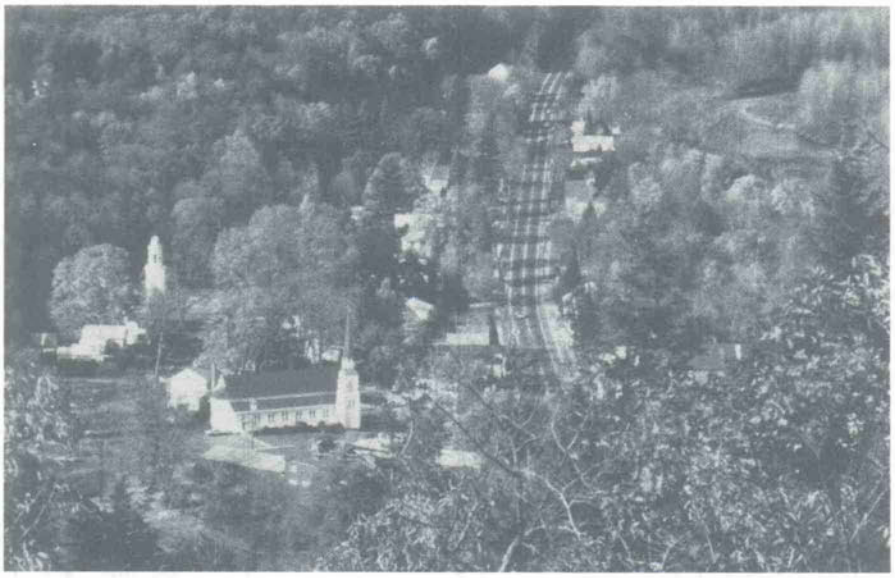
Eric Smith

This chapter provides an overview of the character and resources of the Farmington River study segments and the surrounding area. The purpose of the chapter is to familiarize the reader with the existing condition of the river and its adjacent lands through descriptions of first, the general regional setting (including geography, history, demographics, land ownership, and land use), and second, the river's natural, cultural and recreational resources. Additional information on these subjects can be found in two companion documents to this report — the Draft Eligibility and Classification Report (August, 1989), and the Draft Evaluation of Existing Protection (June, 1990).

2.1 Regional Setting

2.1.1 Geography

The Farmington River is located in the rolling, forested hills of southwestern New England, on the periphery of the major metropolitan region stretching from Boston, Massachusetts to Washington, D.C. The study segments are within an hour's drive of Hartford, Connecticut and Springfield, Massachusetts, and within two hours of Boston, Albany and New York City. (See **Map 1-1.**) Despite this proximity to urban areas, the river flows through a remarkably undeveloped and forested valley, interspersed with small New England communities.



The study segments flow through a number of small communities typical of rural New England, including the town of New Hartford, Connecticut, shown here.

The river originates in the Berkshire Hills in southwestern Massachusetts and flows south into northwestern Connecticut. Meeting an ancient traprock ridge in the town of Farmington, the river abruptly turns north and runs along the base of Talcott Mountain until it finds an outlet through Tariffville Gorge, where it turns to the east and flows into the Connecticut River in the Town of Windsor. The river is 81 miles long overall and drains an area of some 600 square miles. The Wild and Scenic River Study Segments include a total of approximately 28 river miles in the upper part of the basin, not including the area impounded in the Colebrook and Goodwin Reservoirs. (See **Map 1-1** and **Subsection 2.2.3: Hydrology** for further description.)

Springing from high country wetlands and ponds, the river flows past small Massachusetts villages, vestiges of larger towns that were originally located here to take advantage of the river's energy for powering mills. These towns are scattered in the few level and cleared areas within the otherwise heavily wooded, narrow and steep-sided river valley. This pattern continues into Connecticut, although each village downstream becomes successively larger, and development near the river increases. From New Hartford downstream, the larger towns support some commercial and industrial uses near the river, but the valley retains a primarily rural character, with farms, woodlands and scattered development seen in the broadening floodplain.

2.1.2 History

The Farmington River is the focal point for the long history of human settlement within the river corridor. While current residents of the riverfront towns may be less immediately dependent upon the river for water, power, food, or other resources than their predecessors, the communities retain the influence of their historic ties to the river.

Indications of the Valley's early native inhabitants are much less visible than those of later European settlers, but extensive archaeological remains have been documented along the Connecticut Study Segment in Peoples State Forest. Evidence indicates that the river valley harbored several permanent settlements as well as a major east-west travel route. Native tribes relinquished most of their property rights to the valley in a 1640 treaty that was bitterly contested. Small residual Native American populations remained in New Hartford and Riverton into the early nineteenth century, with a few believed to have resided in the valley as late as 1890.

Europeans first settled in the area in the early 1700's. These colonists initially used the valley primarily for agriculture, but they eventually harnessed the river for powering saw and grist mills, tanneries and other industries designed to process primary natural resources. The river's long history of impoundment for a variety of purposes began as early as 1750 with a

dam at Satan's Kingdom in the Town of New Hartford. The population of the river valley increased rapidly during the industrial revolution from 1820 to 1850, as iron foundries, paper mills, textile factories and other industries were introduced to the area. The resultant industrial pollution and deforestation of adjacent lands rapidly degraded the environmental quality of the river and surrounding corridor. By 1860, the river as far north as New Boston in Massachusetts was unsuitable for swimming, and formerly abundant salmon and trout were virtually absent.

In an abrupt reversal, the river valley experienced a general economic decline during the latter half of the 19th century as the small-scale agricultural and hydropowered operations became unable to compete with farms and industries in other regions of the country. As most of the local factories and mills closed, the local population declined sharply.

During the last century, the environmental quality of the river and the surrounding lands has undergone a remarkable recovery, to the point where the river is once again suitable for swimming and fishing. This dramatic improvement is the result of several factors, including the following: reduced industrial pressures; the implementation of strong environmental protection and restoration laws such as state and federal clean water statutes; and citizen activism, spearheaded since the 1950's by the Farmington River Watershed Association.

2.1.3 Demographics

Today, the upper Farmington Valley is characterized by small communities nestled in an otherwise rural, heavily forested region. All three of the towns adjacent to the Massachusetts Study Segment have populations of less than 1,000 year-round residents; seasonal inhabitants more than double the population of these towns. There are two primary factions among the year-round population in the Massachusetts towns: long-time residents, many of whom have family ties in the area dating back for generations; and relative newcomers, including many who have migrated from urbanized areas to take advantage of the natural setting and small-town environment of the Farmington Valley. Also, a significant percentage of the landowners in the Massachusetts towns are absentee owners, many having permanent residences in the New York City, Hartford, and Boston metropolitan areas and traveling to the Farmington Valley for weekends and vacations.

While sharing a small-town, rural feel with the Massachusetts communities, the demographic character of the Connecticut study area towns is influenced by their closer proximity to the Hartford urban area. The four towns through which the Connecticut Study Segment flows are within reasonable commuting distance of Hartford, which is located only twenty miles from the lower end of the segment. In combination with the area's rural character and high quality-of-life, this proximity has made the towns popular "bedroom communities" for people who work in and around Hartford. This is particularly true of the downstream-most towns, New Hartford and Canton, where many residents commute to jobs in the Hartford area. The populations of the four towns reflect this influence, increasing steadily as one moves downstream and gets closer to Hartford. Hartland, at the upstream end of the segment, has a population of only 1,700, while Canton, which abuts the lower mile of the segment, has a population of 8,250. The two towns in between, Barkhamsted and New Hartford, have populations of 3,200 and 5,300, respectively.[7]

The communities along the Connecticut segment support a broader local economic base — including a variety of service-based businesses and small industries — than the towns upstream in Massachusetts. Also, the populations of the Connecticut towns are generally more stable on a year-round basis than those of the Massachusetts communities, with a much smaller percentage of second home owners.

2.1.4 Land Ownership

One of the defining features of the upper Farmington Valley is the fact that most of the land is privately owned and has been that way for generations. A number of large parcels of public land (mostly in state forests) do exist in the study area in both Massachusetts and Connecticut, but more than half of the frontage along each of the study segments is in private ownership.[8]

Figure 2-1 provides an overview of land ownership patterns in the three towns that directly abut the Massachusetts Study Segment. Of the 150 individual lots immediately adjacent to the segment, the vast majority — 135 parcels — are in private ownership.[9] These private lands account for approximately 73 percent of the overall frontage along the Massachusetts segment. Most of the private lots abutting this stretch of the river are small residential parcels with less than 5 acres and 300 feet of river frontage. These smaller lots are clustered

[7] The population figures for the study area towns were gathered from existing records in 1989-90.

[8] For both the Massachusetts and Connecticut Study Segments, there are literally hundreds of individual properties located within the arbitrary 1/4-mile wide study corridor on each side of the river that is required by the Wild and Scenic Rivers Act. As a result, land ownership statistics were not gathered for the entire width of the study corridor. Instead, the analysis concentrated on identifying ownership patterns for the land that is of greatest importance to the river itself — those parcels that directly abut the two segments. Most of the information presented was collected in 1989-90. The statistics also reflect recent acquisitions made by the Massachusetts Department of Environmental Management (of the so-called Kelly, Earth Campground, and Hryckvich parcels), and the Connecticut Department of Environmental Protection (of the so-called Shaw-Gates and Ehrlich-Curtis properties). (Note that the arbitrary 1/4-mile wide corridor referenced above is for study purposes only, and has no bearing on long-term management considerations with or without wild and scenic river designation.)

[9] This total includes any parcel that abuts a road if that road is located directly adjacent to the river (i.e., if there are no other properties between the road and the river).

FIGURE 2-1
Land Ownership Along the Massachusetts Study Segment

Town [a]	Total Number of Parcels [b]	Total Number of Private Parcels	Total Private River Frontage (miles)	Total Number of Public Parcels	Total Public River Frontage (miles)
Otis	102	97	12.75	5	1.85
Sandisfield	41	35	5.31	6	3.29
Tolland	7	3	2.31	4	2.41
TOTAL	150	135	20.37 (73%)	15	7.55 (27%)

[a] Land ownership statistics are not presented for the Town of Becket because although the Town was represented on the Farmington River Study Committee and was active in the project, it does not encompass any river frontage directly on the Massachusetts Study Segment.

[b] Statistics presented include parcels that directly abut the Study Segment and those that abut roads along the river in cases where there are no other recognized parcels between the river and the road.

primarily in the village centers of Otis, New Boston and Roosterville. In between these more densely settled areas, there are a number of larger private lots with more than 50 acres and 1,000 feet of river frontage.[10]

A total of 15 parcels along the Massachusetts segment are held in public ownership, and account for the remaining 27 percent of the total frontage. The largest of these public lands are in the Otis, Sandisfield and Tolland State Forests, managed by the Massachusetts Department of Environmental Management (DEM). The Hartford Metropolitan District Commission and the U.S. Army Corps of Engineers also own and manage sizeable tracts along the lower end of the Massachusetts segment in conjunction with the West Branch Reservoirs, located a short distance downstream. (See **Subsection 2.2.3: Hydrology** for further information about the West Branch Reservoirs.) The final pieces of public land along the segment are small parcels owned by the Towns of Otis and Sandisfield and the Massachusetts Department of Public Works.

Figure 2-2 and **Map 2-1** provide further information on the public lands along the Massachusetts segment.

As shown in **Figure 2-3**, the ownership patterns along the Connecticut Study Segment are similar to those of the Massachusetts segment in that the majority of frontage on the river is privately owned but substantial tracts of adjacent public land also are present. There are 221 separate parcels along the segment, including 200 in private ownership that account for about 51.5 percent of the frontage. As in Massachusetts, the majority of private lots abutting the river in Connecticut are small residential parcels with less than 5 acres and 300 feet of river frontage. These smaller lots are primarily clustered in the community centers of Riverton, Pleasant Valley and New Hartford. Much of the area in between these communities is occupied by larger lots, a number of which contain more than 50 acres and 1,000 feet of river frontage.[11]

An important difference between the two segments is that there is nearly twice as much frontage in public ownership along the Connecticut segment (approximately 48.5 percent) as there is along the Massachusetts segment (27 percent). Most of the public land next to the Connecticut Study Segment is located in three state-owned parcels: the American Legion, Peoples, and Nepaug State Forests. These large tracts of state land, which are managed by the Connecticut Department of Environmental Protection, account for more than 27 percent of the entire frontage on the study segment. In addition, the Hartford Metropolitan District Commission owns several

[10] To give a more precise sense of the land holdings along the Massachusetts segment, 91 of the private lots abutting the river have less than 5 acres of land, and 58 lots have less than 300 feet of river frontage. On the other side of the spectrum, 19 private lots have more than 50 acres of land, and 31 lots have more than 1,000 feet of river frontage.

[11] 162 private lots abutting the Connecticut Study Segment have less than 5 acres of land, and 131 lots have less than 300 feet of river frontage. On the other side of the spectrum, 6 private lots abutting the segment have more than 50 acres of land, and 19 lots have more than 1,000 feet of river frontage.

FIGURE 2-2
Massachusetts Study Segment: Adjacent Public Lands

Managing Institution	Acreage	River Frontage (feet)	Percent of Total River Frontage
Massachusetts Dept. of Environmental Management	2,661	22,675	15.4
U.S. Army Corps of Engineers	138	11,500	7.8
Hartford Metropolitan District Commission	271	4,550	3.1
Massachusetts Dept. of Public Works [a]	3	274	0.2
Town of Otis	2	820	0.6
Town of Sandisfield	0.2	80	0.1
Town of Tolland	0	0	0
TOTAL	3,075.2	39,899	27.2%

[a] The land ownership figures for the Massachusetts Department of Public Works do not include several very narrow parcels owned by the agency that are located between Route 8 and the center of the Farmington River in Otis and Sandisfield. Acreage and frontage statistics for these parcels were not available.

sizeable parcels, including an important 366-acre floodplain area (the so-called 'Greenwoods' parcel) in the middle of the study segment, and three lots totalling 471 acres near the beginning of the segment in Hartland. Together, the MDC's parcels account for more than 20 percent of the segment's entire frontage. The remaining public lands are small parcels owned by the Towns of New Hartford and Canton.

Figure 2-4 and Map 2-2 provide further information on the public lands along the Connecticut segment.

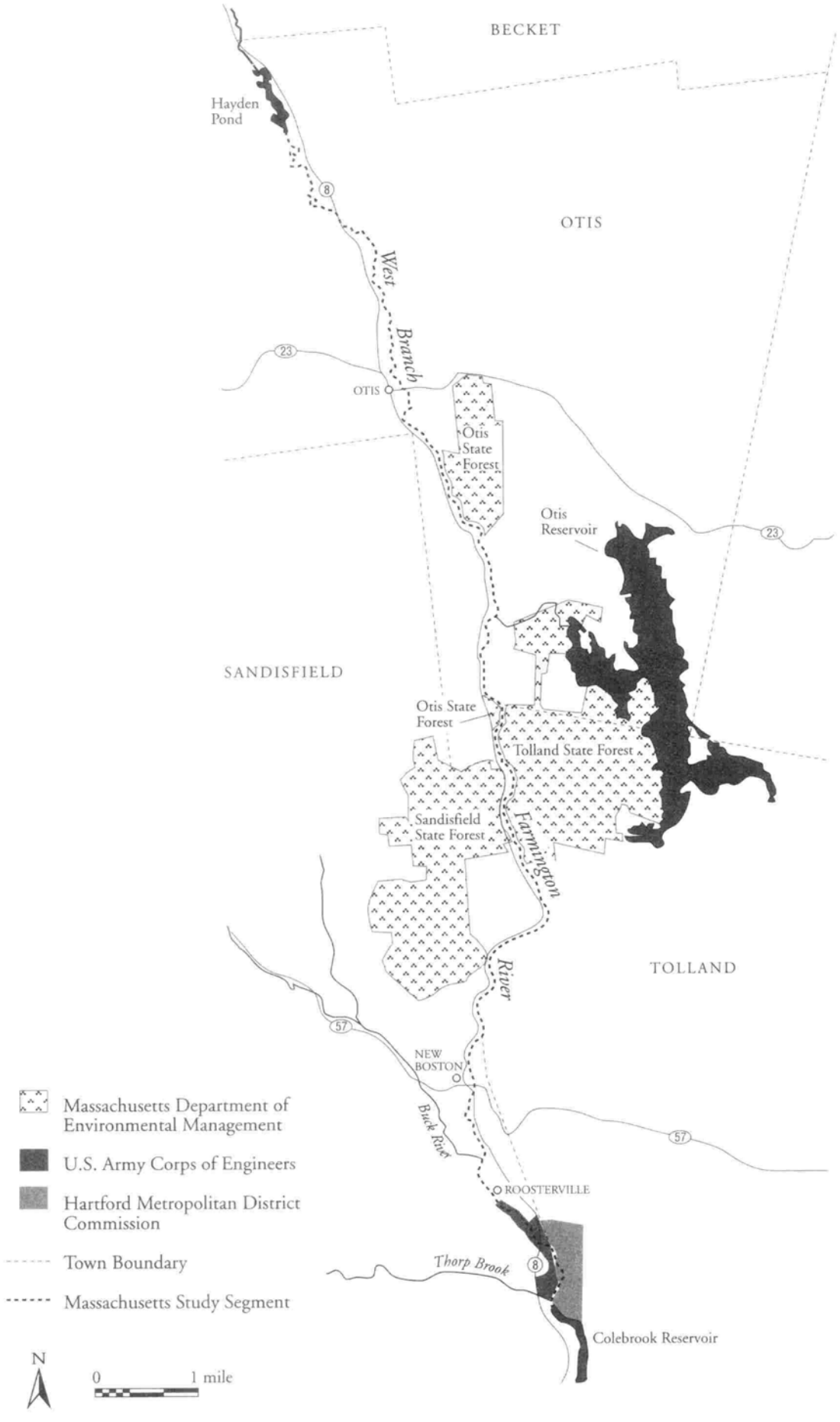
Additional details on the land ownership patterns along the two study segments, including town-by-town statistics, can be found in the Draft Evaluation of Existing Protection (June, 1990).

2.1.5 Land Use

The Massachusetts study area is characterized by extensive forests mixed with sparse development and overgrown farmlands. The development that does exist is concentrated in the historic river communities of Otis and New Boston/Roosterville (part of the Town of Sandisfield). The land between these communities consists largely of woodlands where limited timber harvest occurs. Only a few parcels adjacent to the river have been cleared, primarily for scattered single family residences, a few small farms and a lumber yard.

The northernmost half-mile of the Massachusetts segment is primarily wetlands and broad floodplain. The floodplain narrows downstream through most of Otis, but the valley remains fairly moderate with slopes and ridges set back from the immediate river corridor. In the lower half of the study segment, the river drops more rapidly and steep slopes generally descend directly to the river's banks. The east side of the river along most of the study segment is heavily forested with little road access. The west side of the river is more developed in the town centers, and Massachusetts Route 8 parallels the river on that side for most of the length of the segment. In New Boston, Route 8 crosses the river and runs parallel to it on the east side for one mile south to Roosterville. In this section, the eastern shoreline has relatively more development, primarily in the form of residential homes and small businesses, while the west side is largely undeveloped and forested. Below Roosterville, the valley floor broadens somewhat, and Route 8 crosses back over the river and then climbs up and away from the western shoreline. For the last half-mile of the Massachusetts segment, a little-used paved road (following the former

Map 2-1: Massachusetts Study Segment - Adjacent Public Conservation Lands



path of Route 8) parallels the west bank, but there is no other development nearby. Steep, heavily wooded hillsides and ridgelines set back from the river's immediate shoreline provide an impressive backdrop for this lower section of the segment.

The public lands that abut the river for a total of roughly seven and one-half miles in Massachusetts contribute significantly to the undeveloped character of much of the river corridor. Forestry on the state forests in the area has rebounded in recent years as secondary forests have reached harvestable age, but this activity has a negligible impact on the river. These lands also support a variety of recreational activities. The MDC and Army Corps lands along the downstream end of the segment are largely kept in a natural condition. Many of these public lands provide important public access for river-related recreation.

In the upstream portion of the Connecticut Study Segment, the land use pattern and intensity is similar to the Massachusetts Study Segment. Farther downstream, however, the broadened river valley accommodates a greater variety of land uses and, as mentioned earlier, a higher population and the edges of suburban growth extending from the greater Hartford area.

The lands along the upper two-thirds of the Connecticut segment are predominantly forested, with steep slopes often rising as much as 500 feet from the valley to mountain ridges and ledges. Two communities are located directly on this upper part of the study segment: the historic town center of Riverton, and, further downstream, the small village of Pleasant Valley. These communities, both located within the Town of Barkhamsted, are primarily residential with some small businesses. Riverton is home to many historic structures, including the original Hitchcock Chair Factory, the Old Riverton Inn, and the Union Church. Riverton also hosts the annual Riverton Fair each October. This event, which has been a regional institution since the turn of the century, is held on fairgrounds located just upstream from the confluence of the West Branch and the Still River.

Two state forests (American Legion and Peoples State Forests) and several large parcels of land owned by the Metropolitan District Commission abut this stretch of the river and contribute significantly to the area's undeveloped character. The state forests are managed for multiple uses, including recreation, wildlife habitat, and harvest of firewood, mountain laurel, and saw timber. Forestry operations have not had a noticeable effect on the river. MDC lands along the river also are managed for multiple uses, with more intensive uses such as timber harvest and sand and gravel removal generally isolated from the immediate river corridor. The MDC's shorelands areas — particularly the "Greenwoods" parcel in Barkhamsted and New Hartford — are managed largely for resource conservation and provide important public access to the river. The MDC has developed a handicapped fishing access site at the Church Pool in Pleasant Valley through a cooperative effort with the DEP and the Farmington River Anglers Association.

FIGURE 2-3
Land Ownership Along the Connecticut Study Segment

Town [a]	Total Number of Parcels [b]	Total Number of Private Parcels	Total Private River Frontage (miles)	Total Number of Public Parcels	Total Public River Frontage (miles)
Hartland	14	9	1.0	5	2.3
Barkhamsted	95	91	4.6	4	7.4
New Hartford	94	84	6.9	10	3.1
Canton	18	16	1.13	2	0.03
TOTAL	221	200	13.63 (51.5%)	21	12.83 (48.5%)

[a] Land ownership statistics are not presented for the Town of Colebrook because although the Town was represented on the Farmington River Study Committee and was active in the project, it does not encompass any river frontage directly on the Connecticut Study Segment.

[b] Statistics presented include parcels that directly abut the Study Segment and those that abut roads along the river in cases where there are no other recognized parcels between the river and the road.

FIGURE 2-4
Connecticut Study Segment: Adjacent Public Lands

Managing Institution	Acreage	River Frontage (feet)	Percent of Total River Frontage
Connecticut Dept. of Environmental Protection [a]	4,760	38,467	27.5
Hartford Metropolitan District Commission	927	28,600	20.4
Town of Hartland	0	0	0
Town of Barkhamsted	0	0	0
Town of New Hartford	5	885	0.6
Town of Canton	2	0	0
TOTAL	5,694	67,952	48.5%

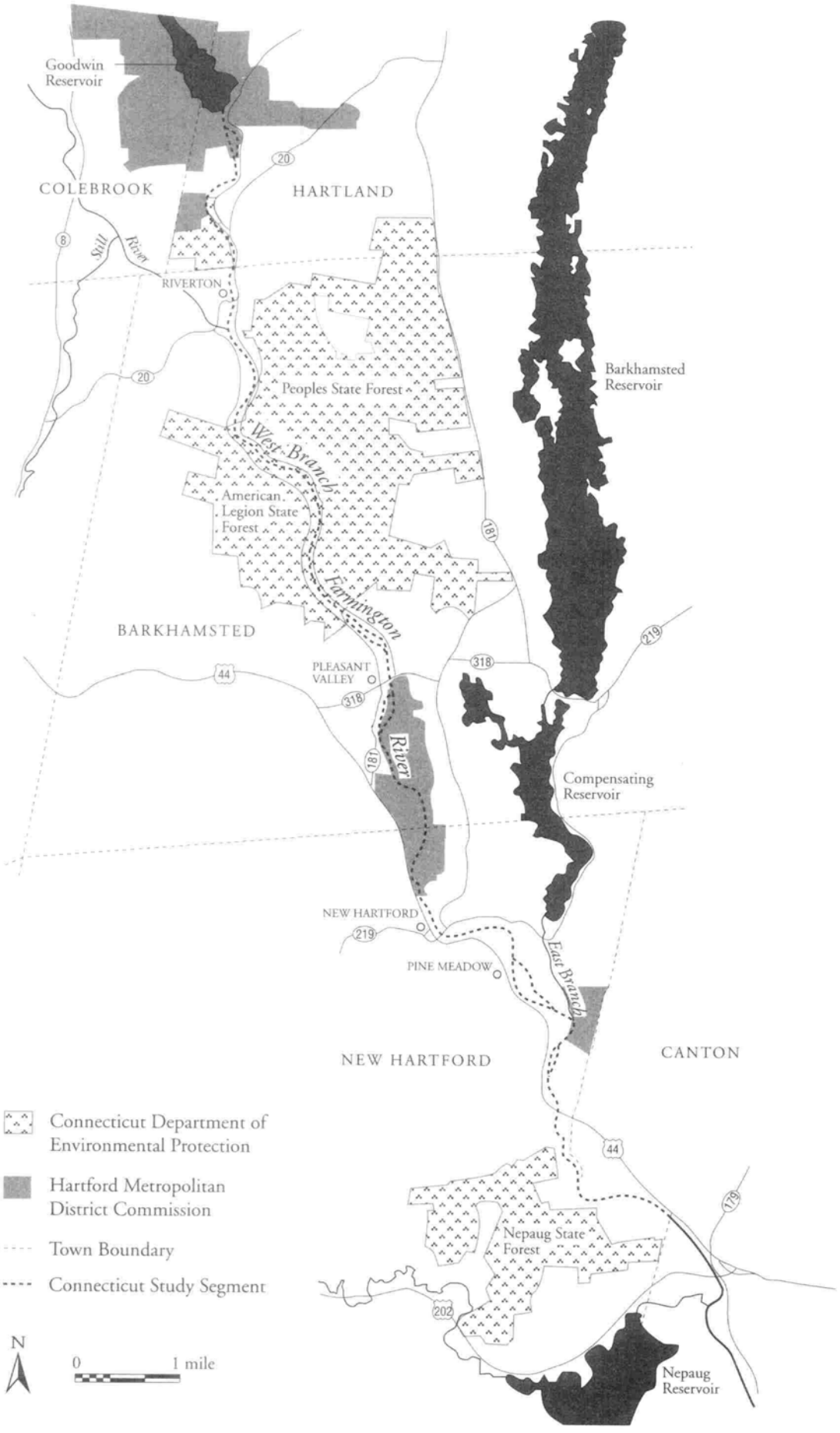
[a] The statistics for river frontage managed by the Connecticut DEP do not include 10-foot wide permanent easements for public fishing access that the agency holds on several parcels in Hartland, Barkhamsted, and New Hartford. These easements were purchased in the 1950's and '60's by the Connecticut Department of Fish and Game, which subsequently became part of the DEP. Statistics on the precise amount of frontage covered by these easements are not available.

While the lower third of the study area in Connecticut is somewhat more developed, the river is generally bordered by vegetated shorelines that maintain a natural appearance and function. The town center of New Hartford is the largest settlement along either of the study segments. Most of the development in the town — including residential areas and a strip commercial zone with several small businesses and light industries — is concentrated on the west side of the river in a two-mile long section. However, even in this area most of the development is set back from the immediate shoreline and does not have a significant effect on the river corridor's natural character. The east bank of the river in New Hartford remains largely forested and undeveloped.

An important public access site — the state-owned "Satan's Kingdom Recreation Area" — is located on the west bank near the southern end of New Hartford, a short distance above the gorge bearing its name. The study segment continues downstream for an additional two miles. With Nepaug State Forest bordering its west side for much of this lower stretch, the river corridor retains a largely natural character, although a few houses can be seen set back from the east bank in the last quarter mile of the segment.

For most of its length, the Connecticut Study Segment is paralleled on one or both sides by low-speed public roads that alternately follow along the shoreline or pull out of sight of the river into dense forests or small hamlets. Connecticut Route 44 also parallels the west side of the river at varying distances through most of New Hartford, then crosses the river on a high bridge just upstream from the gorge at Satan's Kingdom. After the bridge, this two lane highway retreats from the river for approximately one mile before coming back in next to the east bank at the downstream end of the segment. In addition to the state forests and other public sites on the river, the adjacent roads provide good access to the river for fishermen and other recreationists.

Map 2-2: Connecticut Study Segment - Adjacent Public Conservation Lands



The study area is characterized by rolling, heavily forested hills, such as those seen here along the lower part of the Massachusetts Study Segment.

2.2 Natural and Cultural Resources

2.2.1 Geology

The West Branch and upper mainstem of the Farmington River are located in the New England uplands, an area characterized by low, steep sided hills broken by narrow winding river valleys with extensive outcroppings of erosion-resistant rock. Elevations range from 1,000 to 2,000 feet above sea level.

The Farmington River basin consists of bedrock materials and overlying glacial deposits of stratified drift and till. Within the study area, the bedrock is made up of metamorphic rock, including gneiss, schist phyllite and other minor amounts of crystalline rocks. This bedrock is relatively hard and impermeable to water, resulting in a sharply carved river valley dissecting the poorly drained, more level upland topography.

Glaciers played a large role in shaping this area by flattening the peaks, widening the valleys, and leaving behind significant deposits of glacial debris, which obstructed the river's north-to-south flow and forced it to turn north along Talcott Mountain. Extensive deposits of stratified drift and till (which include gravel, sand, silt and clay) were left during the last retreat of glaciers from southern New England. Stratified drift deposits averaging 100 feet in depth cover 22 percent of the Farmington Basin, and provide productive groundwater aquifers. Unsorted tills cover 75 percent of the basin. These deposits form an essentially impermeable mantle over the bedrock and, therefore, do not support significant aquifers. Also, extensive sand and gravel deposits are found in many locations along the river.

2.2.2 Vegetation

The dominant vegetation along the upper Farmington River is a mixed hardwood-hemlock-white pine forest. As the river flows from north to south, characteristic northern hardwood species (predominantly sugar maple, American beech and yellow birch) are gradually replaced by central hardwoods (oaks, hickories, basswood and ash), although site specific vegetation is heavily influenced by land use history, soil characteristics and topography. Within the river valley, marshes, bogs and agricultural development are also significant components of the surrounding vegetation.

A variety of plant species that are more common in northern New England reach the southern limits of their distribution in this region. The Massachusetts Study Segment and surrounding Berkshire County host over 40 percent of the entire Massachusetts flora, with 30 species found only in the county. Both study segments provide habitats for plant species identified as rare or endangered by either the Commonwealth of Massachusetts or the State of Connecticut. Although detailed plant inventories have not been conducted specifically for the Farmington Valley, the State of Connecticut lists

15 State Endangered, 12 State Threatened, and 20 State Special Concern (SSC) Species within the study area. The Commonwealth of Massachusetts identifies an additional nine species.

2.2.3 Hydrology

The 81-mile long Farmington River drains a watershed of 601 square miles, making it the largest tributary of the Connecticut River in the State of Connecticut and the Connecticut River's fourth largest tributary overall. Discharge data at the river's mouth in Windsor are not available due to the lack of a gaging station there; however, records have been kept during the periods from 1913-1939 and from 1971-1993 at the Tariffville Gaging Station, located approximately 11.6 miles upstream from the confluence with the Connecticut River and encompassing a 577-mile drainage area. The average discharge of the river at the Tariffville Gage is 1239 cubic feet per second (cfs), with an instantaneous peak flow of 29,900 cfs recorded on September 22, 1938, and an instantaneous low flow of less than 30 cfs estimated on March 1, 1938.[12]

Seven dams and associated impoundments are located directly on the West Branch and main stem of the river. The second most northerly of these, a small dam that forms Hayden Pond in North Otis, marks the upstream extent of the Massachusetts Study Segment. Continuing downstream, two sizeable dams and impoundments — the Goodwin Dam/Reservoir and the Colebrook Dam/Reservoir (collectively known as the "West Branch Reservoirs") — are located between the two Wild and Scenic River Study Segments.[13] The other dams on the main stem are the Upper and Lower Collinsville Dams in Canton, located approximately 4 and 5 miles respectively downstream of the Connecticut Study Segment, and the Rainbow Dam near the river's mouth in Windsor.

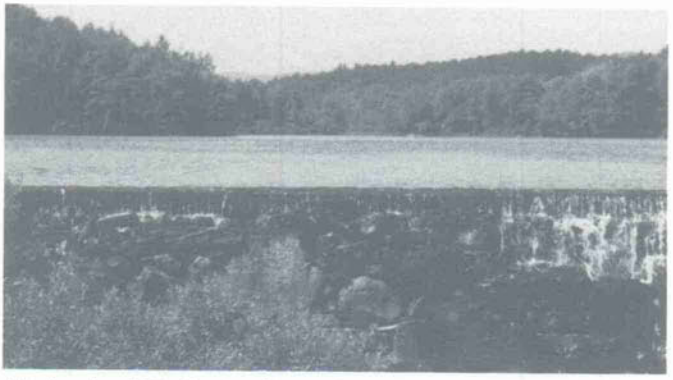
Dams also have been constructed on many of the tributaries to the West Branch and main stem in both Massachusetts and Connecticut. In the Massachusetts portion of the watershed, there are approximately 25 dams in addition to the one at Hayden Pond. There are approximately 66 dams with impoundments greater than 5 acres located within the watershed in Connecticut. Water from impoundments on two of the Farmington's major tributaries in Connecticut, the Nepaug River and the East Branch, is transferred out of the basin to provide public water supply for the greater Hartford area.

[12] The maximum discharge figures recorded at the Tariffville Gaging Station are somewhat misleading because the station was not operational in August of 1955, when extreme high flows were recorded at gaging stations throughout the Farmington River basin. In fact, several stations located in the upper reaches of the basin (and thus having much smaller drainage areas) recorded flows at that time that were themselves substantially greater than the 29,900 cfs maximum discharge recorded at the Tariffville Gage during its operational periods.

[13] The Goodwin Dam/Reservoir is also known as the "Hogback" Dam/Reservoir. The Colebrook Dam/Reservoir is often referred to technically as the "Colebrook River" Dam/Reservoir.

Map 2-3 depicts the Farmington River watershed, including the main stem and principal tributaries, the locations of the major dams and impoundments, and the watershed boundary.

The dams and impoundments dotting the Massachusetts portion of the watershed have a relatively minor effect on day-to-day flows in the Massachusetts Study Segment. On the other hand, regulated releases from the West Branch Reservoirs have a substantial effect on river flows in the Connecticut Study Segment, which begins immediately downstream from the Goodwin Dam. Additional information on legal and statutory requirements and other factors affecting flow management in each segment is provided in **Chapter 4: Resource Management and Protection.**



The low-head Hayden Pond Dam forms the upstream boundary of the Massachusetts Study Segment. Releases from this dam provide most of the water in the upper part of the segment.

The Massachusetts Study Segment includes a total of 14 river miles, almost all of the Farmington's West Branch in Massachusetts. (The true headwaters of the West Branch — which include wetland areas, several small feeder streams, a waterbody known as Shaw Pond, and a short section of the West Branch itself — are located upstream of the study segment, but were not included directly in the study area. Hayden Pond and the dam that creates it separate this upstream area from the study segment.) There are 16 direct perennial tributaries to the segment, the largest of which is the Buck/Clam River system that flows in from the northwest and joins the West Branch in Sandisfield. The watershed of the Massachusetts Study Segment covers an area of 92 square miles.

Flows from the low-head Hayden Pond Dam provide most of the water in the upper part of the Massachusetts segment, but are not adjusted on a regular basis. Of the 25 other dams in the watershed of the Massachusetts Study Segment, there is one that periodically exerts a particularly notable influence on flows in the West Branch — the Otis Reservoir Dam, which creates a sizeable impoundment on the Fall River. A substantial amount of water is released from this dam during a two week period each fall, providing a pulse of water in the West Branch at a time of year when it is usually flowing at very low levels. Several of the remaining dams on tributaries to the West Branch are dry dams managed by the U.S. Soil

Map 2-3: The Farmington River Watershed

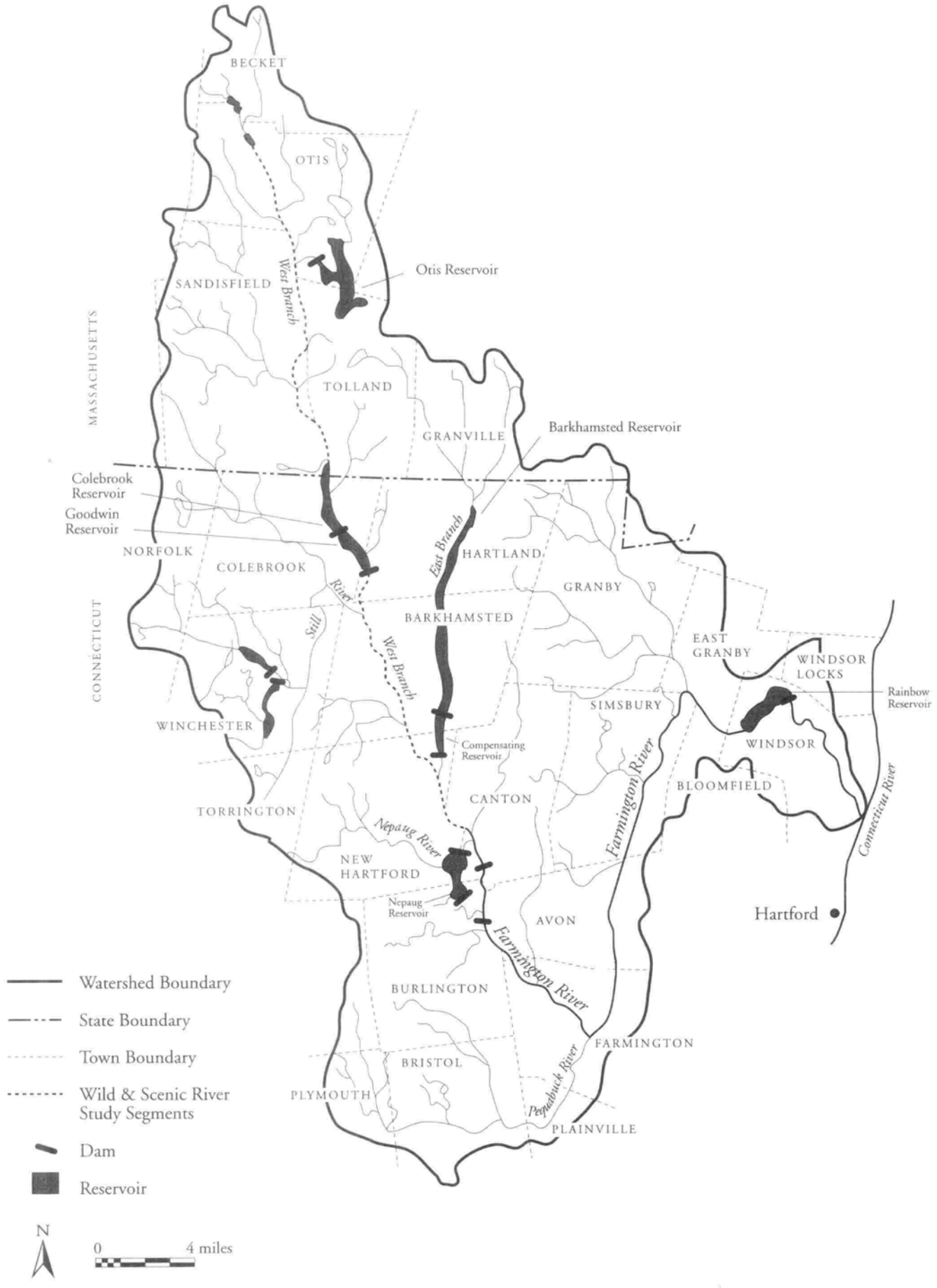
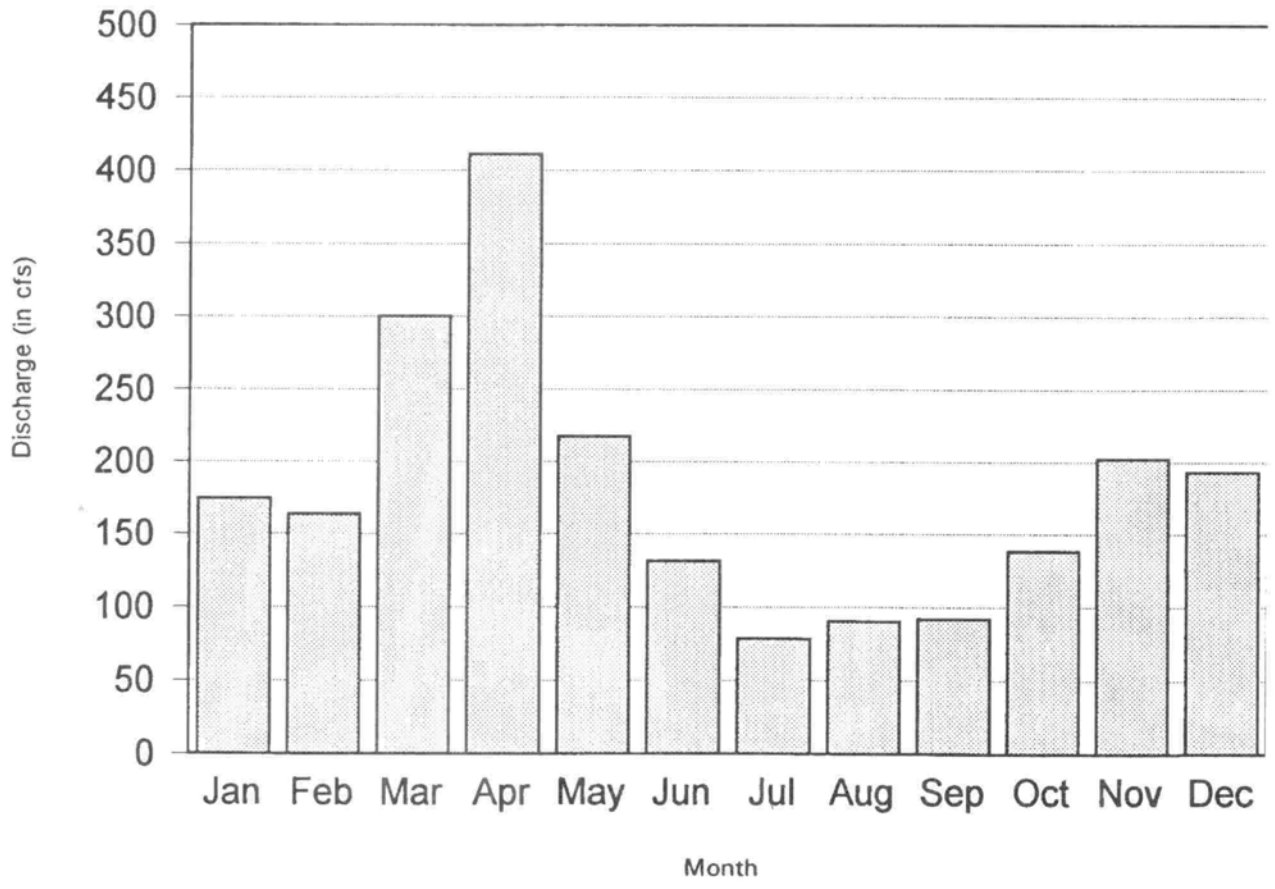


FIGURE 2-5
Average Monthly Discharge of the Massachusetts Study Segment [a]



[a] Measurements recorded at the U.S.G.S. gaging station in Roosterville, one mile south of New Boston, from 1913-1993.

Conservation Service for flood control. These structures impound water only during periods of extremely high flow, and then only for a limited time. The dry dams therefore cause some short-term reductions in West Branch flows during wet periods, but generally do not affect flow volumes on a year-to-year basis.

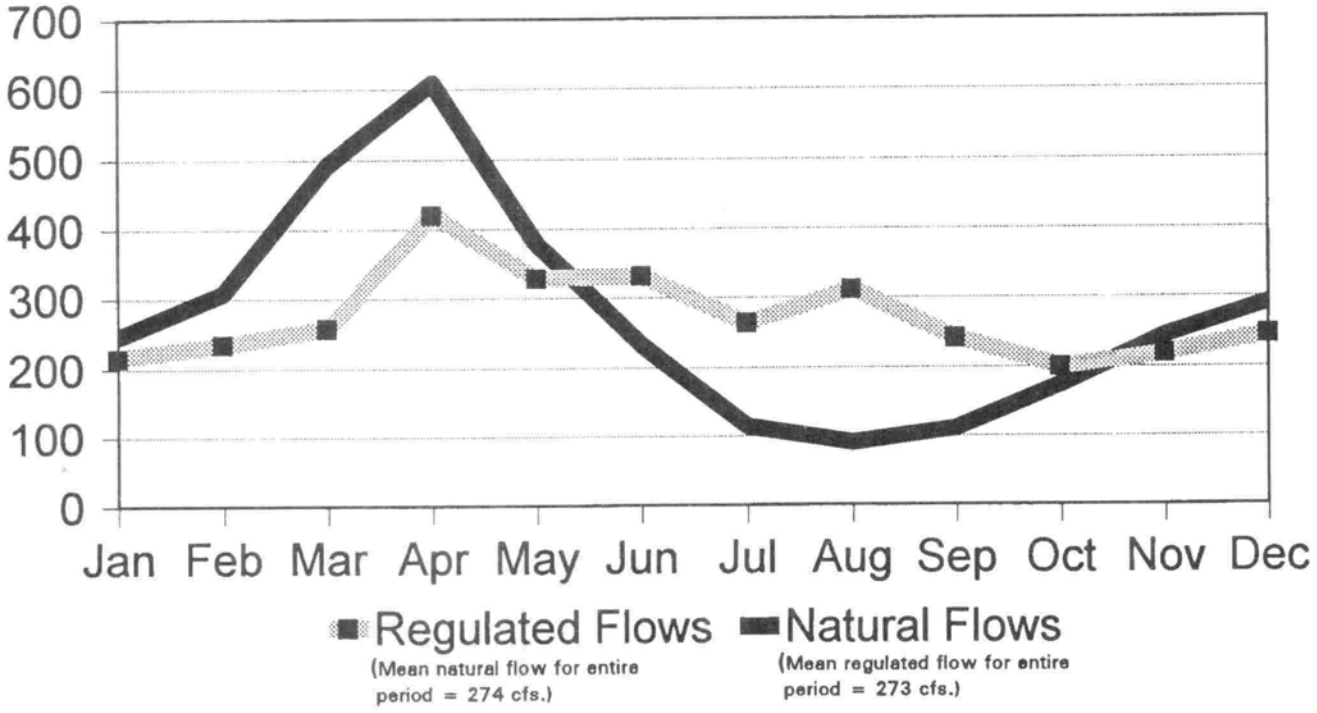
While releases from Otis Reservoir and the other impoundments in the watershed do have some effect on flows in the Massachusetts Study Segment, this stretch of the river is by and large naturally flowing and is very responsive to local weather patterns and snowmelt. As shown in **Figure 2-5** below, the annual hydrograph for the segment is characterized by moderate flows during the late fall and winter months, peak flows resulting from snowmelt and rain in the spring, and lowest flows during the drier months of summer and early fall. The average flow in the segment is 182 cubic feet per second, with a instantaneous peak flow of 34,300 cfs recorded on August 19, 1955 and a minimum daily flow of 2.4 cfs recorded on August 20, 1957.[14, 15]

The Connecticut Study Segment also covers a total of 14 river miles. The segment includes all of the West Branch within the state, and the uppermost 3 miles of the main stem below the confluence of the West and East Branches in New Hartford. There are 18 direct perennial tributaries to the

[14] These measurements were recorded over the period from 1913-1993 at the U.S.G.S. gaging station in Roosterville, approximately 1-1/2 miles above the downstream end of the Massachusetts Study Segment.

[15] The average volume contributed to flows in the West Branch by releases from Otis Reservoir is not certain because long-term measurements of discharges from the Otis Reservoir Dam are not available. However, based on estimates from other gaging stations at locations in the Farmington River watershed in Massachusetts with similar topography, an annual watershed yield of approximately 2 cfs per square mile can be expected. With a total watershed area of 15.9 square miles above the Otis Reservoir Dam, this suggests an estimated average yield over the course of a year of roughly 32 cfs.

FIGURE 2-6
Average Monthly Regulated (Actual) Flows vs. Average Monthly Natural (Calculated) Flows in the Connecticut Study Segment



[a] Average monthly natural flows are projections at Riverton based on changes in the levels of the Otis, Colebrook and Goodwin Reservoirs (i.e., projections simulate natural conditions if the dams/reservoirs did not exist).

[b] Average monthly regulated flows are based on readings from Jan. 1970 - Sept. 1988 at the Riverton Gage Station and are estimated to be 9% greater than Goodwin Dam releases due to 9% greater watershed area at Riverton than at Goodwin Dam.

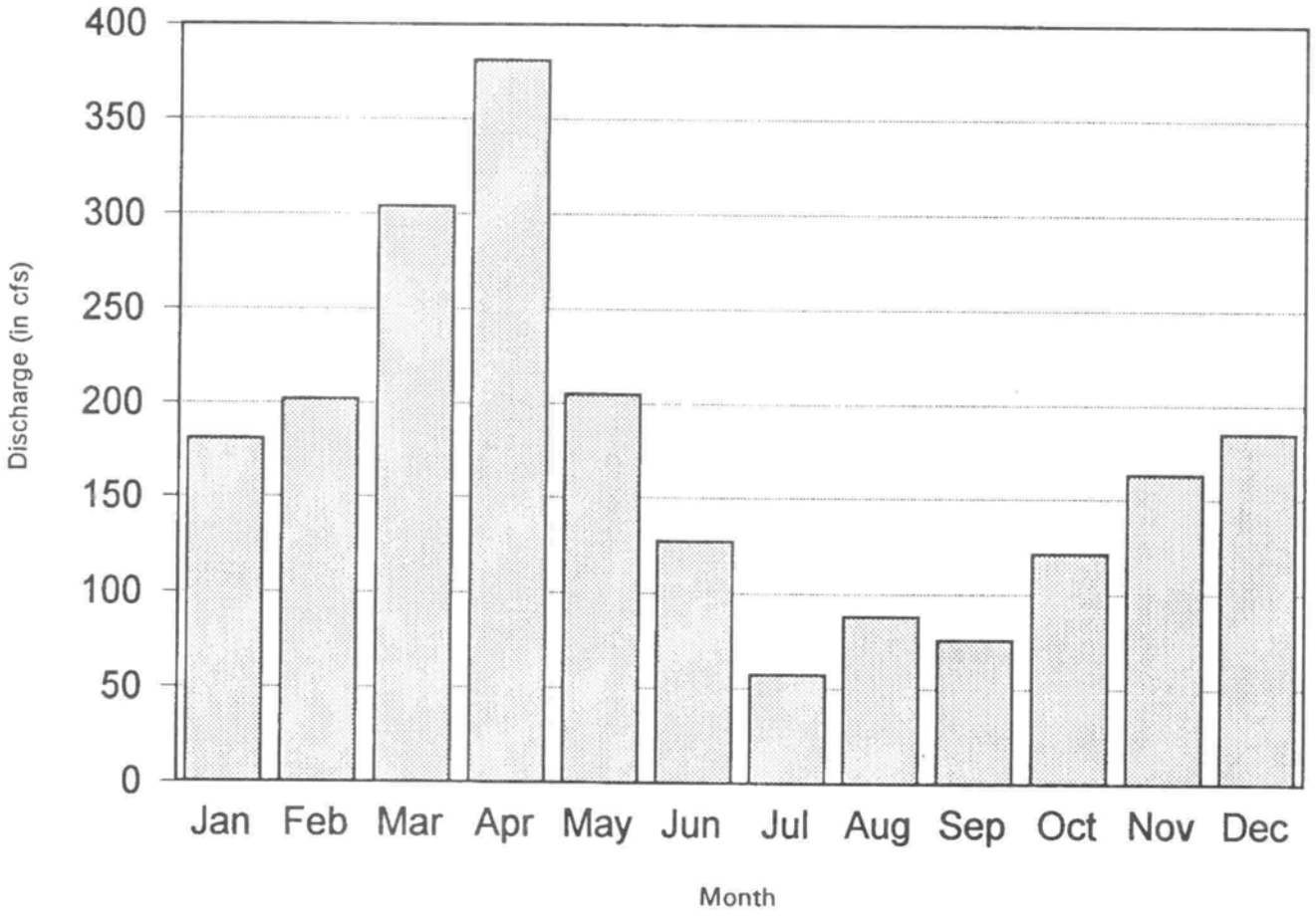
[c] All data from U.S. Geological Survey

segment, the largest being the Still River/Sandy Brook system, which enters from the northwest in Riverton. The Connecticut Study Segment drains an overall area of approximately 310 square miles.

Instream flows in the Connecticut segment are significantly affected by releases from the West Branch Reservoirs through the Goodwin Dam. In fact, these releases account for virtually all of the water in the river for the first two and one-half miles of the study segment, down to the confluence with the Still River in Riverton. Although the pattern of releases from the West Branch Reservoirs has not significantly altered the annual average flow in the river, it has flattened out seasonal variations by reducing high flows during the spring and other wet periods, and increasing low flows during the late summer and other dry periods.[16] A comparison of the actual regulated flows released from the Goodwin Dam and projected natural flows (as if the dams did not exist) for the period from 1970-1990 is presented above in **Figure 2-6**.

[16] Augmented summer flows have enhanced conditions for canoeing, tubing and fishing in the river during summer months. In addition, releases from the West Branch Reservoirs are considerably colder than normal summer river temperatures would be, making the river within the Connecticut Study Segment more suitable for cold water fisheries. These benefits of flow regulation are addressed in **Subsection 2.2.5: Fish** and **Subsection 2.2.6: Recreation**, as well as in **Chapter 3: Eligibility and Classification**. Possible ecological consequences of reduced spring flows are not fully understood; however, there is general agreement that a limited duration high "flushing flow" is necessary to prevent the unhealthy accumulation of fine grained sediments in the streambed. This issue is discussed in greater detail in the summary of the "Instream Flow Study" in **Chapter 5: Water Resources Studies**, and in the description of standards for water quantity in **Chapter 7: The Upper Farmington River Management Plan**.

FIGURE 2-7
Average Monthly Discharge in the Still River [a]



[a] Measurements recorded at the U.S.G.S. gaging station on the lower Still River, approximately one mile upstream from its confluence with the West Branch of the Farmington River, from July 1948 - September 1967 and July 1969 - September 1993.

The average flow in the West Branch above the confluence with the Still River is 251 cfs, with an instantaneous high flow of 57,200 cfs on August 19, 1955 (estimated by slope-area measurement) and an instantaneous low flow of 0.9 cfs recorded in July, 1960.[17]

Besides releases from the West Branch Reservoirs, inflow from the Still River/Sandy Brook system provides the single largest contribution to flows in the Connecticut Study Segment. The watershed of this system alone covers an area of 85 square miles. The annual average inflow from the Still River is 173 cfs, with an instantaneous peak flow of 44,000 cfs recorded on August 19, 1955, and instantaneous low flow of 0.20 cfs recorded on September 14, 1957.[18] Many of the streams in the Still River watershed — including the Sandy Brook system — have not been impounded; as a result, flows in the lower Still River are very responsive to local weather patterns and snowmelt. (See **Figure 2-7**.)

No gaging stations are located near the lower end of the Connecticut segment; recorded measurements of flow levels in this area therefore are not available. However, an understanding of the river's flow patterns can be gained by looking

[17] These measurements were recorded over the period from 1955-1993 at the U.S.G.S. gaging station in Riverton, located approximately one-quarter mile upstream from the confluence with the Still River. The reader should note that the maximum flow, recorded in 1955, occurred prior to the construction of the West Branch Reservoirs, and the lowest flow, recorded in 1960, occurred during the construction of the Goodwin Dam.

[18] These measurements were recorded over the periods from July, 1948-September, 1967 and July 1969-1993 at the U.S.G.S. gaging station on the lower Still River, located roughly one mile upstream from its confluence with the West Branch.

collectively at the historical data presented above for the West Branch in Riverton and the Still River. Additional information on flows in the Connecticut segment can be found in the discussion of the Instream Flow Study in **Chapter 5: Water Resources Studies**, and in the report An Instream Flow Study of the Mainstem and West Branch of the Farmington River (June 1992), which is published separately as a companion to this document.

2.2.4 Water Quality

Water quality in both study segments is very high; the river is suitable for swimming and cold water fisheries throughout both study areas. The Farmington's high water quality is a major success story in ecological restoration. In the past century, the river has evolved from a pollutant-ridden channel carrying untreated effluent from adjacent towns, mills and other industries, into one of the cleanest rivers in the region.

The Massachusetts Department of Environmental Protection (MassDEP) has classified the entire length of the Farmington in the Commonwealth as class B (fishable and swimmable). There are no sewage treatment plants, industrial wastewater facilities or other point sources of pollution on the river. Current and anticipated water quality problems in the area are primarily related to non-point source pollution from septic systems and road runoff. MassDEP has adopted an "anti-degradation" standard to ensure protection of the river's existing high water quality.

Water quality in the Connecticut Study Segment is also high. The Farmington has been classified by the Connecticut DEP as Class A (suitable for drinking water supply) from the Goodwin Dam downstream to the confluence with the Still River, and as Class B from that point downstream to its confluence with the Connecticut River. There are four point source discharges that affect the Connecticut segment: 1) the Winsted Sewage Treatment Plant on the Still River; 2) the Atlantic salmon rearing facility in Peoples State Forest; 3) the New Hartford Sewage Treatment Plant; and 4) Waring Products in New Hartford. Effluent from these facilities is treated sufficiently to maintain Class B standards. In fact, even with these discharges the water quality in the Class B section of the Connecticut Study Segment is higher than the minimum standards required for Class B waters, as shown by the relatively high levels of dissolved oxygen and low levels of nutrients, ammonia, and other indicators. This higher water quality is protected by a strict "anti-degradation" policy for the river established by the DEP under the federal Clean Water Act and Connecticut's Water Pollution Control Statutes.

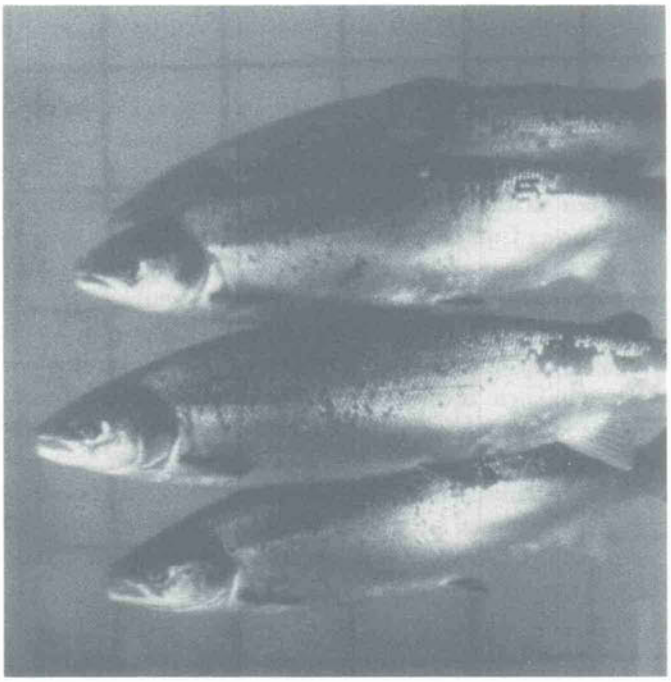
Additional information on the laws, regulations and policies that protect the Farmington's high water quality can be found in **Chapter 4: Resource Management and Protection**, and **Chapter 7: The Upper Farmington River Management Plan.**

2.2.5 Fish

The Farmington River's diverse aquatic habitats and high water quality support 37 native and introduced species of fish. At least seventeen of these have been identified within the Wild and Scenic River Study Segments. Fisheries management has focused on the propagation of three species of trout (brown, brook and rainbow) for sport fishing in both study segments, and on the reintroduction of Atlantic salmon to the Connecticut segment. Although recreational fishing in both areas is largely oriented toward catching stocked trout, several other sport fish, including bass, are found in the study segments.

The Farmington is one of the few remaining unpolluted trout streams in southern New England and is the most heavily stocked stream in Connecticut. Annually, over 42,000 trout are stocked in the entire Farmington River in Connecticut; about 28,000 of those fish are put into the Connecticut Study Segment. The Massachusetts Study Segment is stocked with approximately 9,400 trout each year.

The portion of the Farmington River system in Connecticut also provides some of the most critical habitat in southern New England for the restoration of anadromous fish, particularly Atlantic salmon. In fact, the Farmington and its tributaries provide an estimated 9 percent of the salmon nursery habitat found within the entire 11,250-square mile watershed of the Connecticut River, the largest of sixteen river systems included in the long-term program to restore anadromous species in New England. This major undertaking, begun in 1967, is a cooperative effort relying on important contributions from federal, state, and local governments and private organizations. Through 1986, it was estimated that over $75 million had



The Farmington River is a critical component in the effort to restore Atlantic salmon to the Connecticut River basin. Returning salmon are captured at the Rainbow Dam and transported upstream for spawning at a facility in People's State Forest.

been invested in fish passageways, a major fish hatchery, research, and operational programs in the Connecticut River watershed. In the early 1980's, the Connecticut was identified as one of only four river systems in the program that was projected to reach its restoration potential within the next twenty-five years.

The Connecticut DEP began releasing immature salmon in the Farmington in 1976, and has carefully monitored and artificially spawned returning adults since 1978. Currently, returning adult salmon are captured at the Rainbow Dam near the mouth of the river in Windsor, then transported upstream for spawning in holding ponds at a facility located adjacent to the Connecticut Study Segment. Nursery-raised fry and smolts are released into the study segment, tributaries and lower segments of the river for their downstream migration. In 1994, approximately one million newly hatched fry were released into the Connecticut Study Segment and its tributaries. The high survival and growth rates of the released fish suggest that the river will be able to support natural reproduction.

Although the number of returning adults has been relatively low to date (averaging about 38 fish per year since 1978, with a low of 6 individuals in 1984 and a high of 126 in 1987), the consistent annual return of even relatively few fish bodes well for the eventual success of the program. It is estimated that the Farmington River can sustain a naturally spawning population of 770 adult salmon (roughly 17 percent of the entire projected spawning population of the Connecticut River basin), with an annual sport harvest of 255 fish. In 1982, the U.S. Fish and Wildlife Service estimated that this spawning population could be developed through the introduction of 100,000 to 300,000 immature salmon annually to the Farmington River basin for a minimum of four years. Long-term stocking levels of 5,800 to 19,000 fish will be required to maintain desired spawning populations.

Upstream and downstream fish passage facilities at the existing main stem dams are critical for the long-term success of the restoration program. A fish ladder for upstream passage has been established at Rainbow Dam, and the Farmington River Power Company (which operates the dam) has recently installed a downstream passage facility. The only remaining obstructions to anadromous fish migration to the Connecticut Study Segment are the Upper and Lower Collinsville Dams, located a few miles downstream of the segment's terminus in Canton. There is currently a proposal to reestablish hydroelectric facilities at both of these dams, and the DEP and the U.S. Fish and Wildlife Service have mandated that construction of the projects must be accompanied by establishment of adequate facilities for both upstream and downstream fish passage. The anadromous fish restoration plan does not envision fish passage upstream of the Goodwin Dam.

The high habitat value of the Connecticut Study Segment for Atlantic salmon and trout has been enhanced by the managed, coldwater releases from the Goodwin Dam since its completion in 1960. In particular, releases of water from the bottom of the Goodwin Reservoir throughout the summer and early fall provide higher instream flows of colder water than would be found in the river under natural conditions. These managed conditions help to sustain the Farmington's abundant trout population during what would otherwise be the most stressful time of year, and enable the DEP to continue its stocking program throughout the summer season.

2.2.6 Wildlife

The Farmington River corridor supports a large quantity and diversity of wildlife, including both game and non-game species. The variety of habitats, large areas of undeveloped land, and year-round availability of water all contribute to the area's suitability for both resident and migrant animals. A preliminary inventory of the wildlife resources of the two study segments identified the presence of 239 species of amphibians, reptiles, birds and mammals in the river corridor. This wealth of biological diversity is particularly noteworthy given the river's proximity to the heavily developed eastern seaboard.

The Farmington's avifauna is extremely diverse, with 158 species observed within the study areas. This total, which amounts to more than half of all bird species found in Connecticut, includes 117 species that breed in the area. The region's range of habitats accommodates forest dwellers, colonial marsh nesters, raptors, wading birds and water fowl. Game birds are commonly seen and hunted along the river. Several duck species, Canada geese, ruffed grouse, and woodcock all nest within the area. Wild turkey have been successfully reintroduced throughout a broad range that includes the Connecticut study area, with the first hunting season held in 1981. In addition, a variety of locally rare raptors occur along both study segments.

The Connecticut segment is particularly noteworthy for a population of bald eagles, a federally listed endangered species, that has reestablished a year-round presence in the area. While much of the birds' activity has been centered in the protected watershed of the Barkhamsted Reservoir, they regularly feed on fish in the upper Farmington River, particularly in the winter when the reservoir is frozen. In recent years, the Connecticut DEP, the Hartford MDC, and the U.S. Fish and Wildlife Service have worked cooperatively to support, protect and monitor the eagles' activity. These efforts reached a milestone in May 1992, when a pair of eagles that had been nesting near the reservoir successfully hatched two chicks — the first born in Connecticut in more than 40 years.

The Connecticut Study Segment also provides habitat for many birds listed by the State as Endangered, Threatened, or Special Concern, which are species that occur in small numbers or are undergoing a non-cyclic decline. These species include the great blue heron, the cliff swallow, the great egret, the bald eagle, the northern parula warbler, the savannah sparrow, and the osprey.

An historic peregrine falcon aerie within the corridor of the Massachusetts Study Segment is considered the best potential natural nesting habitat for returning peregrine falcons in the

entire state of Massachusetts. Ongoing efforts to spur the recovery of the peregrine falcon, a federally endangered species, have to date resulted in the establishment of breeding pairs in Boston and Springfield, Massachusetts. The Commonwealth of Massachusetts considers protection of the Farmington aerie to be "extremely important" for the recovery of peregrine falcons in New England.

Anglers from across the Northeast and beyond journey to enjoy the Farmington's renowned trout fishing. The Connecticut Study Segment receives the heaviest use of any section of the river.

Forty-nine species of mammals have been documented within the study area, including locally rare species such as the black bear, deer mouse, fisher, snowshoe hare, and cottontail rabbit. White-tailed deer are ubiquitous and hunted in the state forests adjacent to both the Massachusetts and Connecticut study segments. Over 400 deer are harvested annually on state lands abutting the Massachusetts Study Segment, representing 8 percent of the annual harvest in the state. Several riverine mammals, including river otter, beaver, mink, fisher and muskrat, are found in the study segments and are increasing in population as a result of improved water quality. Nearly all of the fur bearing species are trapped in limited quantities.

The study segments are home to 32 species of amphibians and reptiles. Approximately two-thirds of these species, including the Connecticut State Threatened northern spring salamander, are directly linked to the aquatic and semiaquatic habitats in and around the river.

The Massachusetts Study Segment is also home to a population of state-endangered swollen wedge mussel (*Alasmidonta varicosa*). The presence of these mollusks, which are highly sensitive to environmental degradation, is indicative of the unpolluted, high quality habitat found in the segment. The Farmington population of these mussels is one of only four extant populations documented in the Commonwealth.

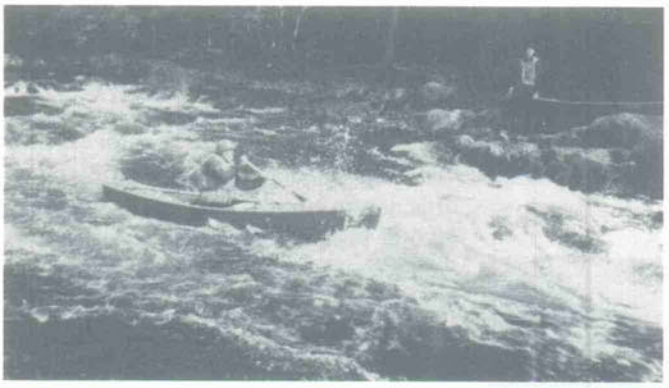
2.2.7 Recreation

The Farmington River supports tremendous recreational use. In Massachusetts, the most noteworthy recreational opportunities are white water boating and good fishing for stocked trout. In Connecticut, trout fishing, boating, and tubing all are highly popular, attracting an estimated 25,000 fishing trips, 30,000 tubers, and thousands of boaters each year. The Farmington is widely recognized as one of New England's premier trout streams, and draws anglers from throughout the Northeast. Over 40 canoeing and kayaking groups from seven states regularly hold organized trips on both study segments, and scores of individual boaters from around the Northeast use the river independently.

The upper half of the Massachusetts Study Segment, from Otis to below Cold Spring, is relatively small and slow moving, with a few class II rapids suitable for nontechnical boating. In contrast, the 3-4 mile section from below Cold Spring to New Boston consists almost entirely of technical class III-IV white water (difficult, with drops and waves of up to 4 feet). These rapids attract hundreds of boaters during two weekends every fall, when releases from the Otis Reservoir Dam into a tributary to the West Branch substantially raise water levels in the river. During those releases, this section is the site of one of the nation's oldest annual white water slalom competitions.

The Connecticut Study Segment is considerably wider than the Massachusetts portion, and is generally characterized by densely wooded shorelines with a mixture of flatwater, riffles, and class I-II rapids. The most heavily used section of the river for boating and tubing is the lower part of the study segment, where the river drops through Satan's Kingdom gorge. The setting within the gorge is spectacular, with a stretch of class III white water framed by steep cliffs on both banks. The state-owned and managed Satan's Kingdom Recreation Area just upstream offers a developed access point to the gorge and is the site of a popular tubing concession. This concession is awarded on a competitive bid basis by the Connecticut DEP. The tubing outfitter frequently reaches the maximum use level set by the DEP of 750 tubes on the river in one day. The current concessionaire estimates that use of the area doubled in just three years from 1986-1988.

The Connecticut Study Segment is the most heavily fished section of the Farmington, receiving approximately 1,000 angler days per kilometer per year. As a result of this popularity, in 1988 the DEP's Bureau of Fisheries designated a 2.7-mile stretch in the middle of the study segment as an experimental "trout management area," where only catch and release fishing is permitted and no seasonal restrictions apply. The area



The Massachusetts Study Segment includes a challenging section of tight, technical class III-IV white water that attracts canoeists and kayakers from around the region.

quickly became very popular with anglers, receiving more than 1,600 angler days per kilometer per year (roughly 10,000 trips per year for the overall management area compared to 2,800 trips per year before the catch and release requirement went into effect). The special regulations also resulted in a catch rate 5 to 10 times higher than in other parts of the river. Because the initial trout management area was so successful, the DEP subsequently expanded it in 1993 to include an additional mile upstream of the original boundary. In order to provide universal access to this outstanding fishing resource, the DEP, the Hartford MDC, and the Farmington River Anglers Association constructed and maintain a handicapped fishing access site in the center of the trout management area in Pleasant Valley.

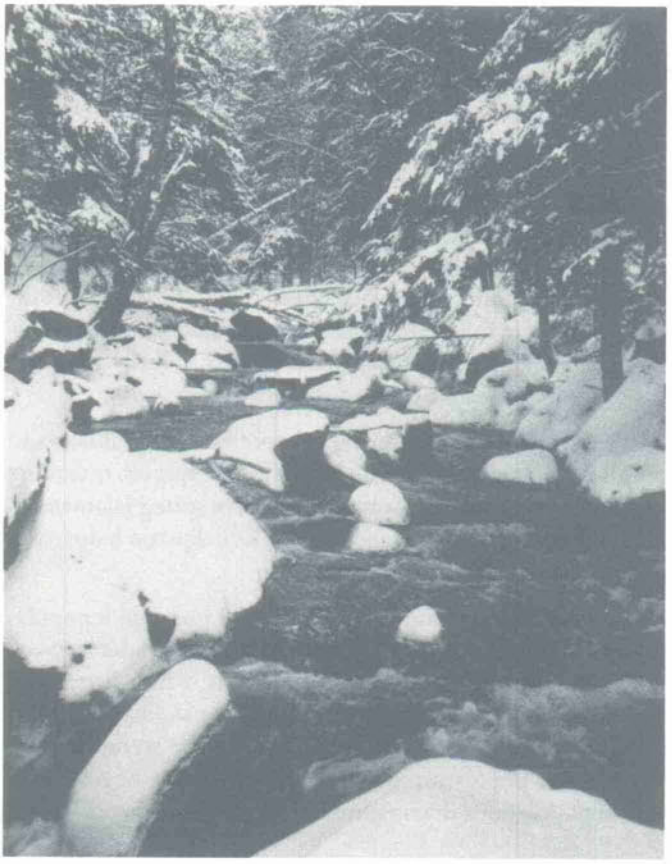
The Farmington's exceptional qualities for instream recreation in the Connecticut Study Segment have been enhanced by the managed flows that have been provided from the Goodwin Dam since the 1960's. As shown in **Figure 2-6** earlier in this chapter, the managed releases have substantially increased flows during the generally drier summer months. Those conditions have resulted in a considerably longer season for the various recreational uses than would exist under natural conditions.[19] The recreational opportunities encompassed in this extended season are particularly significant because most other rivers in the region have insufficient flows to support these uses during the late summer.

In addition to the Farmington's important water-based recreational values, lands along the river also support a wide range of outdoor recreational opportunities, such as picnicking, swimming, hiking, bird watching and wildlife observation, photography, cross-country skiing, and snowmobiling. Camping is very popular in the study area, with public or private campground facilities located along the river in both Massachusetts and Connecticut. Many hikers come through the area on the interstate Tunxis Trail, which traverses Nepaug State Forest and crosses the river just above Satan's Kingdom in New Hartford. Extensive deer hunting and small game hunting is permitted on most public lands. The spectacular New England foliage also attracts many visitors to the scenic roads along the river's banks each autumn.

Public lands in both states support the most intense recreational use of any lands adjacent to the segments. In 1989, the Connecticut DEP estimated that more than 150,000 people made day visits to the three state forests (American Legion, Peoples, and Nepaug State Forests) that abut the Connecticut Study Segment. That year, the DEP also issued more than 9,000 permits for camping at its established facilities in the American Legion and Peoples State Forests.

2.2.8 Scenery

The visual diversity of the upper Farmington valley is a key element contributing to the character of the area. The study segments and surrounding lands retain a natural character only moderately altered by human activity. The view from the river is typically of dense hardwood forests, often covering steep hillsides and periodically broken by fields and small historic towns. The forested ridges running along both sides of the river form visually attractive scenic corridors.



A winter scene on the Fall River, a tributary to the Massachusetts segment in the town of Otis.

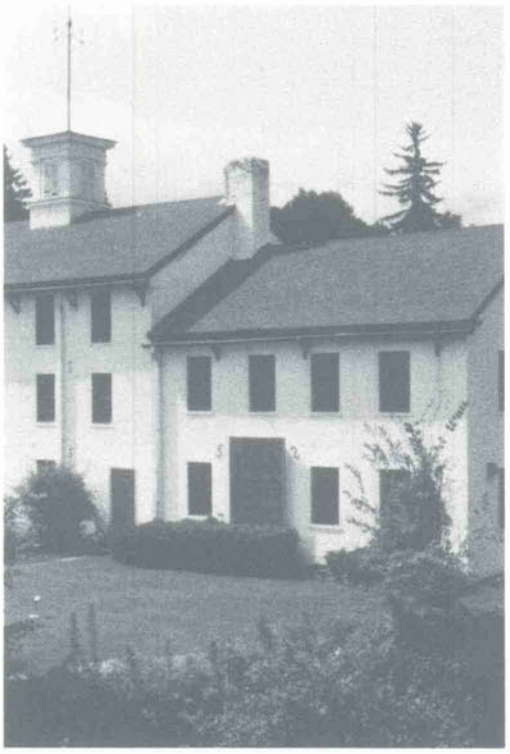
[19] Indeed, with respect to the Farmington's popular tubing opportunities, it is conceivable that this warm-weather use might not exist other than on an isolated basis without the controlled releases throughout the summer. If only naturally occurring higher flows in the spring were available, the combination of colder air and water temperatures at that time likely would prevent any significant tubing use.

In a 1983 study, the University of Massachusetts rated the Massachusetts segment as having high scenic quality and intact natural quality reflecting little evidence of human modification. The Connecticut segment offers a similar range of visual diversity. The Satan's Kingdom area is perhaps the most dramatic scenic resource in the Connecticut study area, with turbulent white water flowing through the steep-sided, 200-foot deep and 1500-foot long gorge. Remarkable views are offered both from the river within the gorge and on the trails skirting the cliffs above. The historic river communities in both states add to the scenic diversity of the area, as do the essentially natural sections of the river corridor in the adjacent state forests and other undeveloped lands.

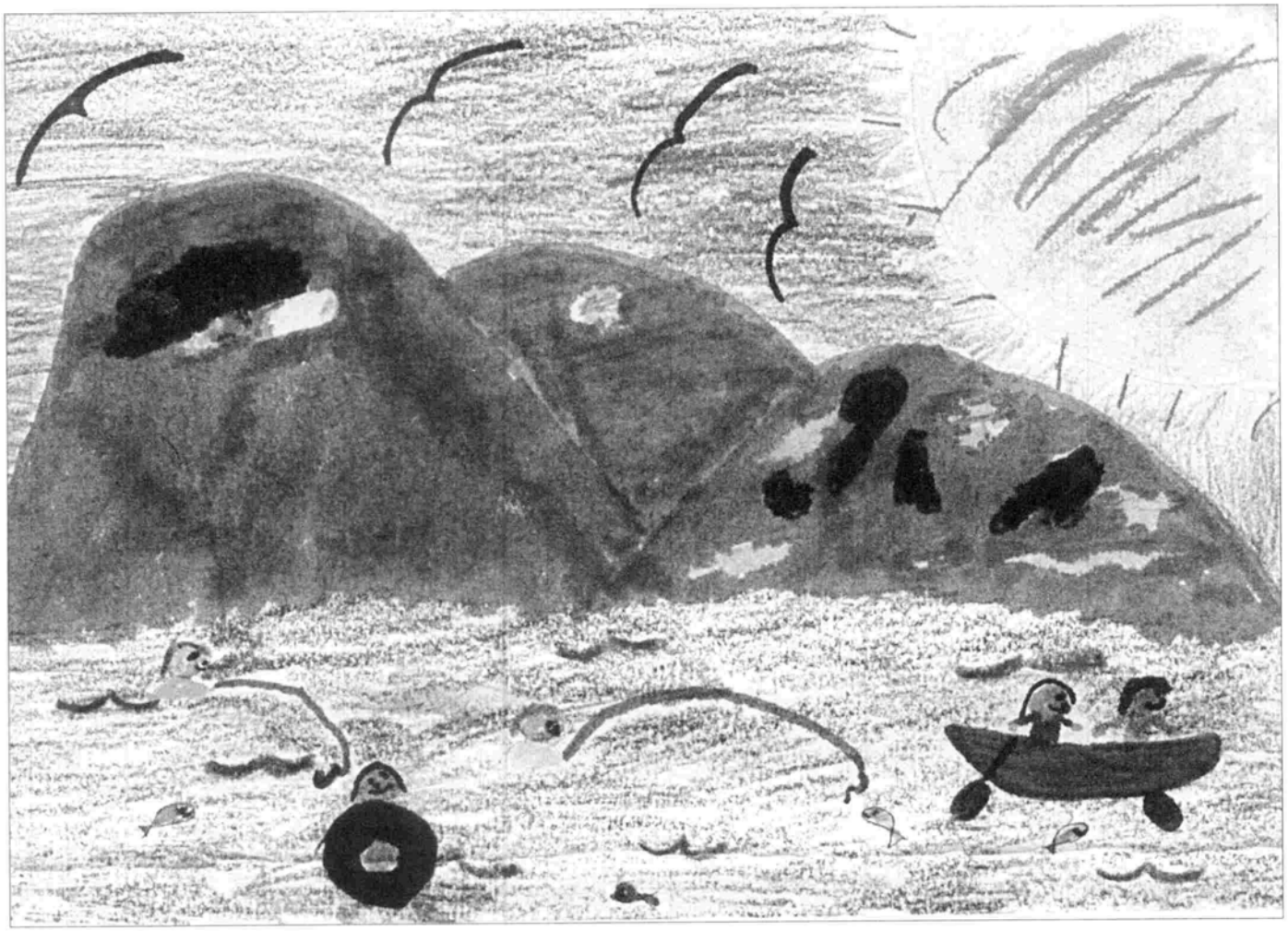
2.2.9 Historic and Archaeological Resources

Noteworthy remnants of the Farmington Valley's long history of human activity can be found throughout the areas surrounding both study segments. Evidence of the Valley's early native inhabitants include important archaeological sites that have been documented along the Connecticut Study Segment. One area in Peoples State Forest has been nominated for listing on the National Register of Historic Places in recognition of its extensive archaeological artifacts.

Historic structures associated with early European settlement are more prevalent. In the Massachusetts study area, 73 historic buildings and sites were identified in the Town of Otis alone. The New Boston Inn in Sandisfield is a landmark dating back to 1737, testimony to the long history of travel through the Farmington River Valley. In the Connecticut study area, four buildings near the river have been listed on the National Register of Historic Places: the 19th century Chapin house in Pine Meadow; the Depression-era Civilian Conservation Corps (CCC) shelter in the American Legion State Forest; the Old Riverton Inn; and the 19th century Gothic revival style stone Union Church, also located in Riverton. In addition, thirteen buildings have been listed on the Connecticut State Register, including the restored and operational Hitchcock Chair Factory, originally built in 1818. Also noteworthy are the concerted efforts made by the Town of New Hartford to promote and conserve its many historic buildings. As part of these efforts, the Town has designated the Pine Meadow area, located adjacent to the river, as a local historic district.



The restored and operational Hitchcock Chair Factory, located in the village of Riverton, Connecticut, is one of many historic structures that contribute to the character of the study area.



Chapter 3: Eligibility and Classification

One day in the summer my mom, brother, some friends, and I decided to go tubing. We went to the Farmington River, since we live near there.

The water was perfect, it was just the right temperature, cold! The water was shallow enough so the rapids were great but it was deep enough so you didn't bump into rocks - which really hurts. There were some people but not so many you didn't see animals. We saw an osprey and two seagulls. I enjoyed seeing these animals up close.

Katie Hart

This chapter summarizes the methodology and results of the eligibility and classification analyses. The purpose of the eligibility study was to determine whether the study segments meet the minimum resource criteria of the Wild and Scenic Rivers Act for inclusion in the national system. To be eligible, a river segment must meet two requirements: 1) it must be "free-flowing;" and 2) it must possess one or more outstanding resource value(s), including but not limited to scenery, recreation, fish and wildlife, geology, and historic and cultural resources. If a segment is found eligible, it must then be given a proposed classification as either "wild," "scenic," or "recreational," depending upon the types and amount of development in the river area. This classification applies if the river is eventually designated into the national system.[20]

Because the character of the river corridor changes noticeably between the Massachusetts Study Segment and the Connecticut Study Segment, and because the two segments are separated by the sizeable impoundments of the West Branch Reservoirs, individual assessments of eligibility and classification were conducted for each segment. Preliminary findings of the eligibility and classification assessments were reviewed by the Farmington River Study Committee's River Eligibility Subcommittee. Both study segments were found to be eligible for inclusion in the National Wild and Scenic Rivers System. Each was determined to be most appropriate for "recreational" classification.

The information upon which the eligibility and classification determinations were based was gathered from local, state, and federal agencies, private conservation organizations, local colleges, and individual experts. While much of that information was discussed previously in ***Chapter 2: Description of the Study Area****, this chapter presents the information in a more narrowly defined context — that of highlighting the most significant of the Farmington River's natural, cultural, and recreational features. Additional information on the river's resources can be found in the Draft Eligibility and Classification Report (August, 1989), which is published separately as a companion document to this report.*

3.1 Methodology

3.1.1 Eligibility

Free-Flowing Condition

Section 16(b) of the Wild and Scenic Rivers Act defines "free-flowing" as:

> ...existing or flowing in natural condition without impoundment, diversion, straightening, riprapping, or other modification of the waterway. The existence, however, of low dams, diversion works, and other minor structures...shall not automatically bar...consideration for...inclusion: *Provided*, That this shall not be construed to authorize, intend, or encourage future construction of such structures within components of the national wild and scenic rivers system.

Federal guidelines provide the following additional clarification: "The fact that a river segment may flow between large impoundments will not necessarily preclude its designation. Such segments may qualify if conditions within the segment meet the criteria [for eligibility]...Existing dams, diversion works, riprap and other minor structures will not bar recreational classification provided that the waterway remains generally natural and riverine in appearance."[21]

Outstanding Resources

The Wild and Scenic Rivers Act and related federal guidelines do not specify standards for how the determination of resource significance (i.e., whether a resource value qualifies as "outstanding") should be made, but indicate that it should be based on the professional judgement of project staff. In the case of the Farmington River Study, the National Park Service considered a resource to be outstanding if it could be documented as unique or exemplary in a regional or national context. (It is accepted practice among Wild and Scenic River planners nationwide that a river segment should have resources that are at least regionally significant in order to be eligible for inclusion in the national system.) To be considered unique, a resource (or combination of resources) must be the only one of its kind in the region. To be considered exemplary, a resource must be one of the best examples of its kind in the region. For the purposes of this analysis, the region was defined as the New England uplands, an area characterized by a landscape of low, steep-sided hills broken by narrow winding river valleys, with elevations ranging from 1,000 - 2,000 feet above sea level. The region includes parts of Connecticut, Massachusetts, Vermont, and New Hampshire.

3.1.2 Proposed Classification

The Wild and Scenic Rivers Act and associated federal guidelines require that if a river segment under study is found eligible for designation, it then must be evaluated to determine

[20] A finding that a river segment is eligible for designation does not necessarily mean that the river is an appropriate addition to the system. The eligibility analysis simply determines whether the study process should be carried forward into the suitability phase.

[21] 47 *Fed. Reg.* 39457-58; September 7, 1982.

which of the classifications established in the Act would be most appropriate if the segment is eventually included in the national system. The Act establishes three classifications — "Wild," "Scenic," and "Recreational" — that are distinguished by the amount and types of development along the river. The Act specifies that:

- "Wild" river areas are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted.
- "Scenic" river areas are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by road.
- "Recreational" river areas are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

The three main factors that are considered in determining the appropriate classification for a given segment are: (1) waterway development; (2) shoreline development; and (3) accessibility. To be classified as "wild," a river also must meet certain water quality standards.

It is important to emphasize that the three classifications are based solely on the amount and types of development existing along the river, and do not necessarily reflect either the outstanding resources that may be present or the primary management objectives for the area. This is particularly relevant for rivers classified as "scenic" or "recreational." For instance, the term "recreational" does not imply that rivers given that classification must be managed to promote additional recreational use. Nor does it mean that recreational values are necessarily the most, or the only, significant resources in the segment. Regardless of classification, management plans and policies should be designed to maintain and enhance the existing character of the river corridor and the outstanding resources identified in the eligibility assessment.

It also should be noted that classification is only important in a long-term management context for rivers that flow through federally managed public lands. For those rivers, federal land management agencies have specific management guidelines for each classification. On rivers such as the Farmington that flow through private and/or non-federal public lands and for which no federal land management is proposed, classification is inconsequential. It has no bearing on either the non-federal management framework for the river corridor, or on the review of federally assisted water resource projects required under Section 7 of the Wild and Scenic Rivers Act. Nonetheless, Section 2(b) of the Act requires that a proposed classification be given to any river segment found eligible for inclusion in the national system.

3.2 Findings for the Massachusetts Study Segment

3.2.1 Eligibility

Free-flowing Condition

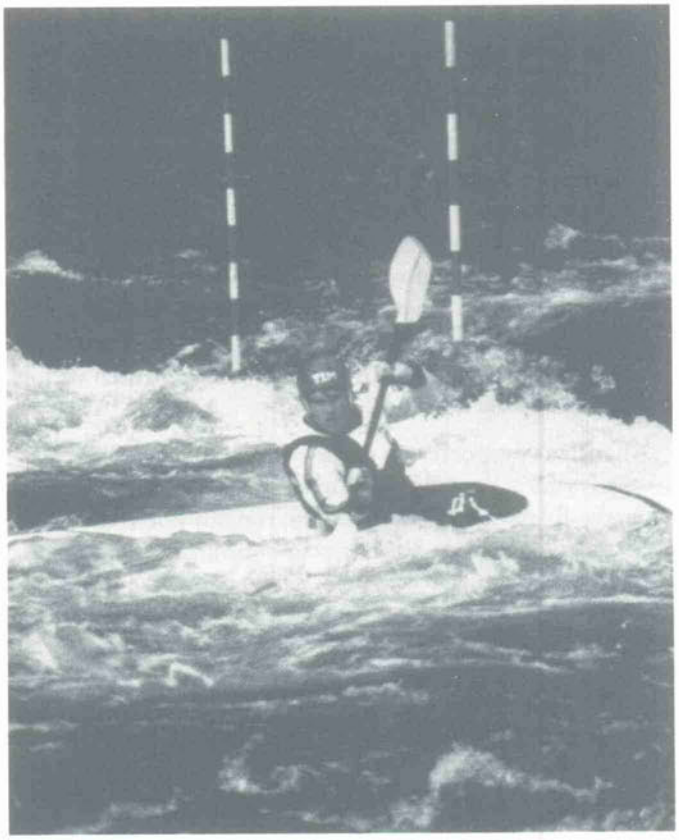
As noted previously, the Massachusetts Study Segment is located between two impoundments — the smaller Hayden Pond located immediately upstream of the segment, and the much larger Colebrook Reservoir downstream. However, within the authorized study boundaries, the segment meets the definition of "free-flowing;" that is, it is free of impoundments, diversions, and major shoreline modifications. While bridge abutments, short sections of riprap and road embankments, and the remains of historic power canals and mill races are scattered along the shoreline of the segment, these modifications do not significantly diminish the river's natural integrity and were determined to be "minor structures". The study segment "remains generally natural and riverine in appearance" throughout its length.

Outstanding Resources

- **Recreation:** The Massachusetts segment of the Farmington River is treasured by expert boaters as one of the region's finest white water runs. While the segment is normally runable only during spring runoff or following heavy rainfall, controlled releases from the Otis Reservoir (located on a tributary, the Fall River) during a two week period each fall provide a high quality canoeing and kayaking experience at a time when nearly all other white water rivers in the region are impassable. These scheduled releases regularly attract hundreds of boaters, including both individuals and organized groups from around the region. In addition, the Appalachian Mountain Club holds one of the nation's oldest annual competitions during these releases. Published river guides for the New England region indicate that fewer than 20 similar high order white water runs exist in Connecticut and Massachusetts.

  These white water boating opportunities were determined to be a regionally exemplary recreational resource value.

- **Wildlife:** The Massachusetts Division of Fisheries and Wildlife's Natural Heritage Program has identified the presence of an historical peregrine falcon aerie within the study area. This aerie, which overlooks the Farmington River, is regarded as the best natural cliff site in Massachusetts for reoccupation by returning wild peregrines, a federally listed endangered species. The primacy of the site is a function of its large size and immediate access to the river, where peregrines can prey on the abundant bird populations that fly across the river and adjacent open areas. Protection of the Farmington River site is considered "extremely important" for the recovery of peregrine falcons in New England.



Autumn dam releases on the Fall River provide flows in the Massachusetts Study Segment that support one of the nation's oldest annual white water competitions.

The relationship of this historical aerie and associated habitat for peregrine falcons with the river was determined to be a regionally unique wildlife resource value.

Conclusion

In light of its free-flowing condition and outstanding recreation and wildlife values, the Massachusetts Study Segment was found to be eligible for Wild and Scenic River designation.

3.2.2 Proposed Classification

The classification analysis for the Massachusetts Study Segment found the following:

(1) **Waterway Development:** The Massachusetts segment is free of impoundments. Scattered modifications to the riverbanks are evident (e.g., bridge abutments, short sections of riprap and road embankment, and the remains of a few historical structures such as mill/tannery foundations), but the "waterway remains generally natural and riverine in appearance."

(2) **Shoreline Development:** In some areas, the river shoreline has returned to a largely primitive and undeveloped state. However, "substantial evidence of human activity" exists, particularly in the historical communities of Otis and New Boston, and limited logging and agricultural practices continue.

(3) **Accessibility:** The river is "readily accessible by road." It is paralleled by Massachusetts Route 8, a two-lane state road, along its west bank throughout most of the segment. Smaller local roads also provide access in several areas where Route 8 pulls away from the immediate river corridor. Bridge crossings are found on a rough average of one every two miles.

Given this level of development and human activity, the Massachusetts Study Segment would be most appropriately classified as a "recreational" river.

3.3 Findings for the Connecticut Study Segment

3.3.1 Eligibility

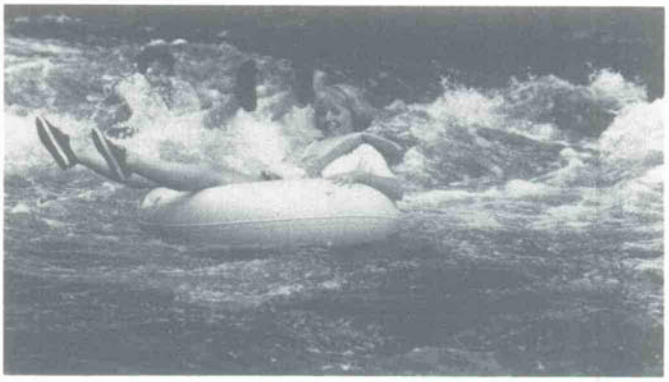
Free-flowing Condition

As noted previously, the Connecticut Study Segment begins immediately downstream of the Goodwin Dam and Reservoir in Hartland. However, within the authorized study boundaries, the segment meets the definition of "free-flowing;" that is, it is free of impoundments, diversions, and major shoreline modifications. While short sections of the shoreline scattered along the segment have been modified by bridge abutments, riprap, road embankments, and in one location a retaining wall, these modifications do not significantly diminish the river's natural integrity and were determined to be "minor structures." The study segment "remains generally natural and riverine in appearance" throughout its length.

Outstanding Resources

- **Recreation:** The Connecticut Study Segment offers a broad range of conditions that attract large numbers of sport fishermen, boaters, tubers, and other recreationists. Rough estimates indicate that tens of thousands of recreationists participate in each of these activities annually within the study area. The significance of the segment's recreational opportunities is heightened by its close proximity to the major population base of the northeastern United States. In addition, because of managed releases from the Goodwin Dam that extend the recreation season beyond what would be available naturally, the Farmington is one of only two rivers in Connecticut (the Housatonic is the other) that offers white water canoeing, kayaking, and tubing throughout the summer, when these activities are most popular.

  Over 40 canoeing and kayaking groups from seven states regularly use the river for group outings, and scores of individual boaters from around the Northeast use the river on their own. Satan's Kingdom, a steep-sided gorge with class III white water, is the most heavily used stretch of the study segment, where boaters and fishermen often share the river with over 2,000 tubers on a peak use day.



Tubers are among the thousands of recreationists who enjoy the Connecticut Study Segment's combination of flatwater and moderate white water, high water quality, beautiful scenery, and an extended recreation season.

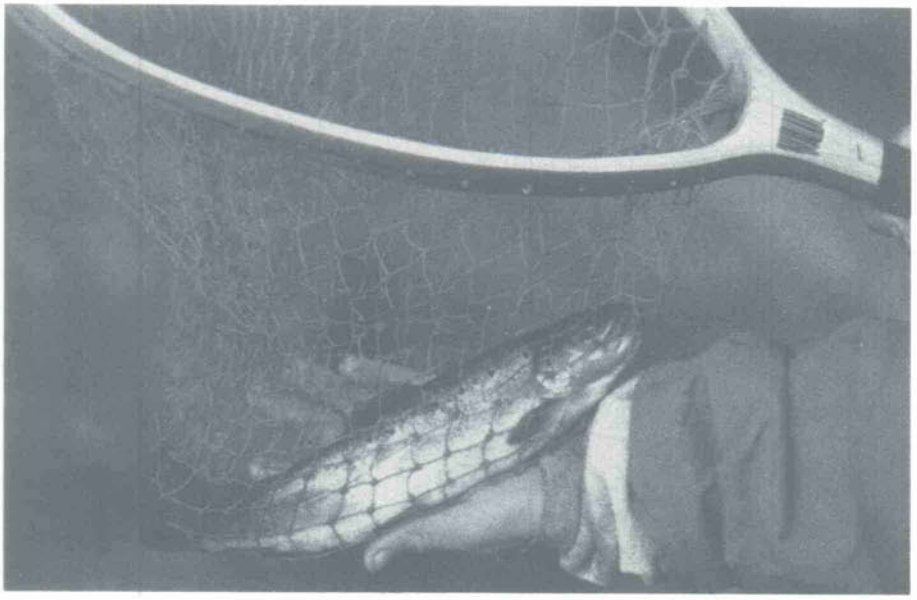
The Connecticut Study Segment also is the most heavily stocked trout stream in the state and is the most intensively fished section of the entire Farmington River. Each kilometer of the study segment receives an estimated 1,000 fishing days annually; use increases to more than 1,600 angler days per kilometer in the 3.6-mile long Trout Management Area (TMA) in Barkhamsted. In total, these figures translate into an estimate of more than 25,000 fishing days per year in the segment as a whole. The river offers high quality fly fishing with a relatively high catch rate, particularly in the TMA. Most fishing within the segment is seasonal, with roughly 60 percent of the activity occurring in the spring, although catch and release fishing is allowed year-round in the TMA. Also, controlled releases of low temperature water from the West Branch Reservoirs allow for summer and fall stocking throughout the segment, supporting an extended season. As with canoeing and kayaking, the Farmington's late-season fishing is particularly valuable because many other trout streams in the region are no longer fishable.

The combination of recreational attributes provided by the segment — namely, the diversity of activities available; the intensity of use for several major activities (fishing, boating, and tubing); the uniformly high quality of experience for all uses; and the proximity to major population centers — was determined to be a regionally unique recreational resource value.

- **Fish**: The relatively high water quality, gravelly stream bottom, and regulated releases of cold water from the West Branch Reservoirs throughout the year combine to make this segment of the river classic habitat for salmonids. Because of these qualities, the Farmington is a critical component in the ongoing effort to reintroduce the once-plentiful Atlantic salmon to the Connecticut River basin, the southern portion of its natural range. This large-scale program, which has been underway since 1967, is a cooperative venture involving numerous federal, state and local agencies and private organizations. Of the sixteen river systems in New England that are targeted for the restoration of the Atlantic salmon and other anadromous fish populations, the Connecticut River and its tributaries, including the Farmington River, is the largest. It is one of only four river systems projected to reach its restoration potential within the next 25 years.

  If current proposals are implemented, it is projected that the Farmington will be able to sustain a population of 770 naturally spawning adult salmon, roughly one-sixth of the entire Connecticut River system's estimated population. The Farmington River system, and in particular, the prime spawning grounds found in the Connecticut Study Segment "are considered critical to the success of the effort. Any significant alteration that impacts the habitat in a negative manner within these reaches will cause irreparable harm to the restoration program."

  In addition to the Atlantic salmon, nearly all of Connecticut's freshwater sport fish species can be found in the Farmington River. The river is one of the few remaining unpolluted prime trout streams in southern New England, and the upper portion of the river in the study area is the most heavily stocked trout stream in Connecticut. Approximately 28,000 fish are released per year into the Connecticut Study Segment, which supports the most intensive fishing of any section of the river both in terms of annual and peak-period fishing.



The Connecticut segment's gravelly stream bottom, high water quality, and regulated coldwater releases throughout the year make for excellent trout habitat. This stretch of the Farmington is the most heavily stocked stream in the state.

The high quality of fish habitat in the Connecticut segment and the segment's significance both to the Atlantic salmon restoration effort and as a prime trout stream were determined to be a regionally exemplary resource value.

- **Wildlife:** Bald eagles, a federally listed endangered species, have reestablished a year-round population in the study area. Most of the birds' activity has occurred around the Barkhamsted Reservoir, which has a protected watershed that is closed to the public, providing the undisturbed conditions these birds demand. However, eagles have been sighted year-round on the West Branch, and are most common in the winter months when the reservoir freezes over and the birds fish in the faster flowing sections of the river that remain ice-free. In May 1992, the effort to reestablish bald eagles reached a major milestone when a pair of eagles nesting near the reservoir successfully hatched two chicks. These were the first eagle chicks born in Connecticut in more than 40 years.

  The regular presence and nesting activity of bald eagles in the study area was determined to be a regionally unique wildlife resource value.

- **Historic Resources:** In many areas along the Connecticut Study Segment, historic structures and other artifacts remain that reflect the river's central role in the cultural heritage of the Farmington Valley. Structures dating from the 19th century, when mills and other hydropowered industries dotted the river banks, can be found in all three of the principal riverfront communities — Riverton, Pleasant Valley, and New Hartford.

  Several nationally recognized historic sites whose past is linked to the Farmington are located near the river. The National Register of Historic Places includes four buildings in the area: the 19th century Chapin house in Pine Meadow; the Depression-era CCC shelter in American Legion State Forest; the Old Riverton Inn; and the early 19th century Gothic revival style stone Union Church, also located in Riverton. Other examples of the historic character of these Farmington River communities include the operational Hitchcock Chair Factory in Riverton, and the clusters of 19th century buildings found in the state and locally designated historic districts of New Hartford and Pine Meadow.

  Important archaeological remains also have been found along the Connecticut segment. An area that includes portions of Beaver Meadow in Peoples State Forest has been nominated as a National Historic Site in recognition of its extensive archaeological remnants of pre-colonial Native American settlements. In 1986 and 1987, surveys by the Farmington River Archaeological Project of floodplain, terrace and upland locations along the segment in the Peoples and Nepaug State Forests uncovered prehistoric sites throughout the area. New studies are revealing that these were major sites occupied year-round, and that this may have been a major trade route for the indigenous peoples. The tools and artifacts found show that this valley was a separate and distinct system from those of other regional river valleys, with different forms of land use.

  These diverse historic resources were determined to be a regionally exemplary resource value.

Conclusion

In light of its free-flowing condition and outstanding recreation, fish, wildlife, and historic resources, the Connecticut Study Segment was found to be eligible for Wild and Scenic River designation.

3.3.2 Proposed Classification

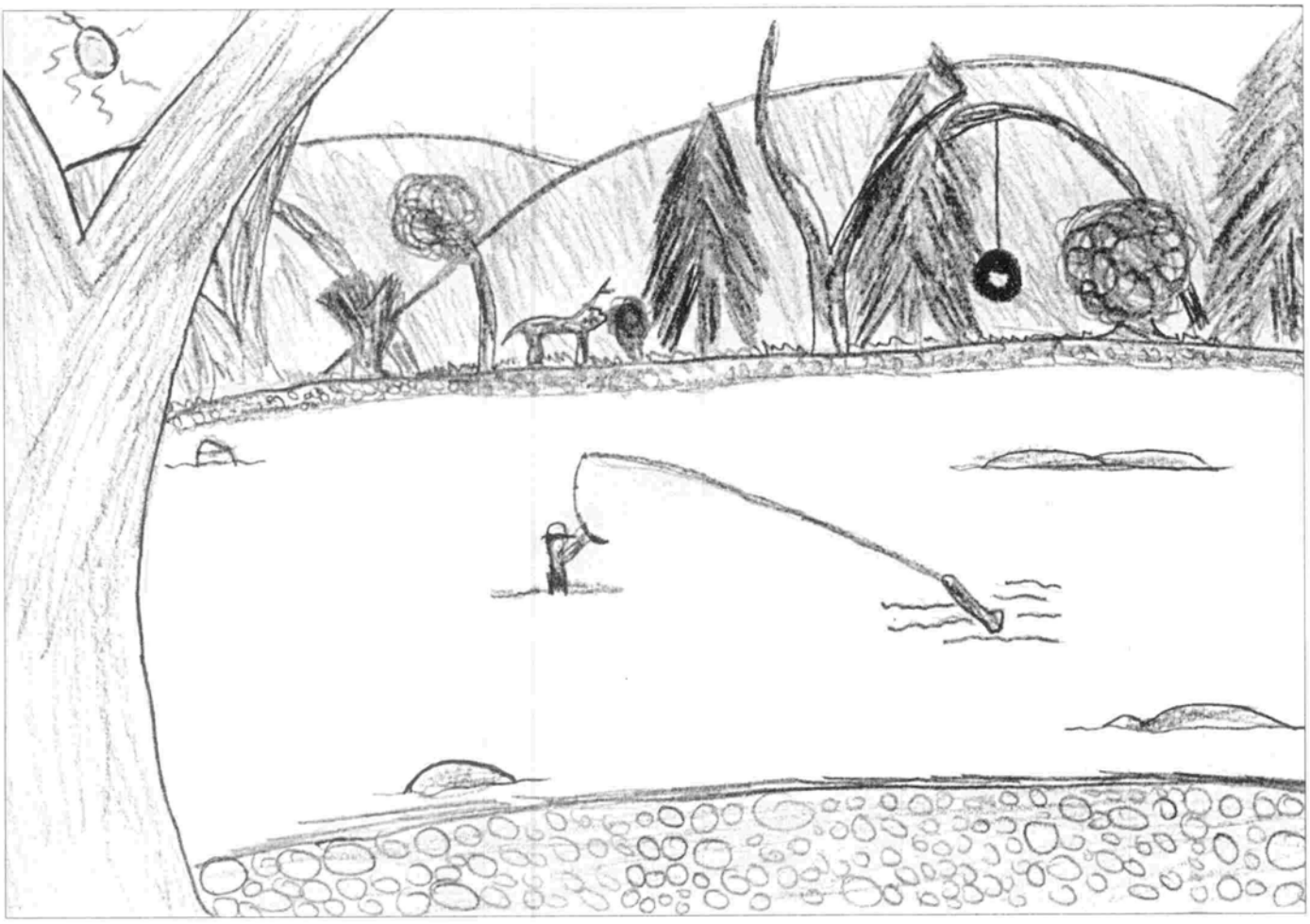
The classification analysis for the Connecticut Study Segment found the following:

(1) **Waterway Development:** The segment is free of impoundments. Scattered modifications to the riverbanks are evident (e.g., bridge abutments, riprap, road embankments, and a short retaining wall), but the "waterway remains generally natural and riverine in appearance."

(2) **Shoreline Development:** Some portions of the river shoreline have returned to a condition not unlike that of 300 years ago, but there are several areas that exhibit "substantial evidence of human activity." Residential and commercial development is concentrated in the historical community centers of Riverton, Pleasant Valley, and New Hartford.

(3) **Accessibility:** The river is "readily accessible by road." Local and state roads parallel the river on one or both sides throughout most of the segment. Bridge crossings are found on a rough average of one every 3.3 miles.

Given this level of development and human activity, the Connecticut Study Segment is most appropriately classified as a "recreational" river.



One day my family and I were riding our bikes on the river road and enjoying looking at the river. We packed a lunch, and sat on the bank to eat. While we ate, we watched the fishermen and wildlife on the river. On the way home, I got hot and we decided to stop for a swim in the river. We swam for a while and then rode home. The water was cool and refreshing and that was one trip along the Farmington River that I will never forget.

Christopher Meder

This chapter provides an overview of the many laws, regulations, programs, agreements, and physical characteristics that currently affect the management and protection of the two study segments. There are two primary purposes: first, to give the reader an understanding of how the river and surrounding lands are managed; and second, to provide a foundation for evaluating whether there are adequate mechanisms in place to provide long-term protection for the Farmington's outstanding values without the need for federal land acquisition and land management. The actual determinations of the adequacy of the existing management and protection mechanisms for each segment are presented in ***Chapter 8: Suitability.***

Three levels of laws and regulations are described in this chapter — local, state, and federal. While the federal laws affecting the two study segments are the same, the States of Massachusetts and Connecticut have distinct statutes and programs related to the various aspects of river management. Also, there are legal agreements that have an important effect on river management in one state but not the other (particularly with respect to instream flow management). As a result, the chapter is divided into separate sections for each state.

Recognizing that the condition of any river is a function of both instream/water resource management and adjacent land management, the chapter includes detailed discussions of each of these subjects in each state. The description of the management and conservation of riverfront lands is divided into sections on ***1) private lands,*** *and* ***2) public lands.*** *For private lands, most of the discussion focuses on the local, state, and federal programs (laws, regulations, incentives, etc.) that exert the greatest influence on land use. Physical characteristics of the corridor (for instance, steep slopes, adjacent wetlands, lack of road access, etc.) that help to protect the river by limiting the amount of development that can occur also are identified. The sections on public land management describe the policies and programs of the relevant agencies that determine how these lands are used.*

For instream/water resource management, the discussion is separated into the three main components of instream conditions: ***1) water quality; 2) water quantity;*** *and* ***3) the integrity of the river's channel, banks and associated wetlands.*** *Summaries are provided of the relevant laws, regulations, and other agreements affecting each of those three components.*

Much of the information presented in this chapter is derived from a comprehensive inventory and analysis of the effectiveness of existing management and protection mechanisms prepared by the National Park Service and the Farmington River Study Committee in the early stages of the Wild and Scenic River Study. The complete results of that analysis are included in a companion document to this report, the Draft Evaluation of Existing Protection (June, 1990), to which the reader should refer for additional details. Since the completion of that report, a number of significant actions have been taken at the local and state levels to provide additional protection to the river. The description that follows includes both the management and protection mechanisms in place at the outset of the Wild and Scenic River Study and those additional actions that occurred over the course of the project.

The reader also should note that the laws, regulations, programs and agreements summarized in this chapter formed the foundation of a comprehensive river management plan for the Connecticut Study Segment that was prepared and adopted during the latter stages of the Wild and Scenic River Study. That document, entitled the Upper Farmington River Management Plan, is summarized in **Chapter** *7; the full Management Plan is published separately as a companion to this report. The Management Plan binds together the many existing management and protection mechanisms affecting the Connecticut segment by establishing strong objectives and standards to guide their future implementation.*

4.1 Massachusetts Study Segment

4.1.1 Land Management

Private Lands

As described in **Chapter 2**, more than 70 percent of the shorelands along the Massachusetts Study Segment is privately owned. The laws, regulations, and other programs governing the ways in which those lands may be used are therefore of critical importance to the health of the river.

In keeping with New England tradition, land use control along the Massachusetts segment is primarily under the jurisdiction of town governments through the implementation of state authorizing statutes and federal programs. The most important of these locally administered programs are described in the next part of this subsection.

In addition to the locally administered programs that are of primary importance, there are certain statutes and programs having a bearing on land use along the Massachusetts segment that are administered directly by state and federal agencies. These programs are summarized after the discussion of locally administered programs.

The section on private lands concludes with a brief description of the physical characteristics found along the Massachusetts segment that limit the potential for intensive development of the shorelands, which thereby further protect the river from degradation.

Locally Administered Programs

Following are summaries of the most important statutes and programs affecting land management that are implemented primarily at the local level.

- **Wetlands Protection Act (M.G.L. Chapter 131, Section 40)**: The Massachusetts Wetlands Protection Act was the first of its kind in the country and is still one of the strongest state wetland acts in existence. The Act is intended to protect eight public interests related to wetlands, including: 1) flood control; 2) storm damage prevention; 3) protection of public and private water supply; 4) protection of ground water supply; 5) prevention of pollution; 6) protection of fisheries; 7) protection of land containing shellfish; and 8) protection of wildlife habitat. To achieve these goals, the statute empowers local conservation commissions to regulate any project that would alter the river, its floodplain, or land within 100 feet of the river or a bordering vegetated wetland. Any activity within those areas must be approved by the local conservation commission before it can proceed.

  The Wetlands Protection Act is particularly effective in protecting the Farmington's water quality from nonpoint source pollution resulting from activities on adjacent lands. However, it is important to recognize that the Act does not directly protect the scenic or recreational values of river corridors. Under the Act, the natural integrity of riverfront land can only be protected to the extent that it coincides with protection of the river's water quality or wildlife habitat. Consistency of enforcement from town to town also can be a problem. Nonetheless, the Wetlands Protection Act is one of the strongest laws protecting the Massachusetts stretch of the Farmington River from adverse effects of riverfront development.

- **Title 5 of the State Environmental Code (M.G.L. Chapter 21A, Sec. 13; M.G.L. 111, Sec. 31 & 127)**: Established in 1977, Title 5 provides a comprehensive set of minimum regulations for the siting and construction of septic systems in order to protect public health and the environment. The most important section of the regulations for the Farmington is that which prohibits the siting of any new septic system's leaching field within 50 feet of a watercourse. Title 5 also requires a minimum of two percolation tests per lot — one for the septic site and one for a reserve site — and two deep observation holes for determining the character of the soil. These provisions are enforced by each community's Board of Health, which is authorized to pass more stringent regulations if deemed necessary. All three of the towns abutting the Massachusetts Study Segment have used this authority to establish a 100-foot setback from the river for new septic systems.

  Title 5 is one of the most important regulatory programs for the upper Farmington Valley because all of the Massachusetts towns in the study area rely entirely on septic systems. Moreover, these towns have soil conditions that are exceptionally limiting for the placement of septic systems under Title 5 regulations. (In fact, local and regional land use officials claim that the difficulty in finding acceptable percolation sites is the most important factor limiting growth in these towns.) Thus, while the intent of Title 5 is to protect water quality from degradation by sewage disposal, it has the added practical effect of limiting development and thereby protecting the rural and scenic character of the Farmington Valley.

  As with any state law relying on local enforcement, the key to the effectiveness of Title 5 is the ability of volunteer local health boards to enforce it. Enforcement of siting new septic systems appears to be very strong in all of the study area towns. However, there has been a problem with the failure of older systems established prior to the adoption of the regulations in 1977. The local boards have strong authority to deal with these problems, but they are often reluctant to use their full powers.

- **National Flood Insurance Program (NFIP) (P.L. 90-448)**: The NFIP was established to provide homeowners in flood hazard areas with federally subsidized flood insurance as an alternative to the escalating cost of disaster relief. To be eligible for the insurance, however, the homeowner's community must first adopt official Federal Flood Insurance Rate Maps that delineate flood hazard areas, and then establish at least minimum floodplain regulations that place some restrictions on development in those areas. All development must conform to those regulations to qualify for flood insurance. The local board that administers the program (each town's planning board in Massachusetts) is encouraged to adopt floodplain regulations more stringent than the Program's minimum standards.

  In general, the NFIP has been quite successful in motivating communities to voluntarily establish floodplain management ordinances. Three of the four Massachusetts towns (Becket, Otis, and Sandisfield) have chosen to participate in the program and adopt the necessary regulations. However, while the regulations established in those towns do restrict building in the floodplain to some extent, they do not fully protect the natural functions of the floodplain; building is still allowed as long as certain conditions are met.

- **Municipal Land Use Statutes:** The Massachusetts **Zoning Act (M.G.L. 40A)**, the **Subdivision Control Law (M.G.L. 41, Sec. 81A - 81GG)**, and other enabling laws give towns in the Commonwealth almost complete authority to regulate land use as they see reasonable for ensuring the general health, welfare, and safety of the public. These authorizing statutes will not be reviewed in this section; rather, the focus will be on the specific zoning and subdivision bylaws adopted by the study area towns pursuant to the enabling statutes.

Under the various authorizing statutes described above, all four of the Massachusetts towns in the study area have established regulations that provide protection either directly or indirectly for the Farmington River and its adjacent lands. These include ordinances regulating wetland disturbance, building in floodplain areas, septic system installation, density and type of development, subdivisions, erosion and sedimentation control, sand and gravel extraction, and forestry practices. More specifically, the three towns that directly abut the Massachusetts segment — Otis, Sandisfield, and Tolland — all have adopted restrictions on building in the 100-year floodplain, a 100-foot setback for new septic systems, and wetlands regulations that restrict activities within 100 feet of the river. The three towns also have relatively low-density zoning bylaws (2 acres in Tolland, and 1 acre in Otis and Sandisfield) that emphasize residential and agricultural land uses for lands along the river. The Town of Becket also has adopted local bylaws that help to protect the Farmington's headwater wetlands from detrimental land uses.

Local land use regulations are the key to protecting the natural integrity of the Farmington River corridor. This view is looking upstream from the Route 57 bridge in New Boston, Massachusetts.

One local zoning action taken during the Wild and Scenic River Study is sufficiently important for protection of the river that it deserves to be highlighted. In 1991, the Town of Tolland adopted a "River Protection District" as an amendment to its zoning bylaws. The district prohibits new structures and sand and gravel operations in the river's 100-year floodplain or within 200 feet of the river. It also includes restrictions on vegetation removal (a 50-foot no-cut zone and limitations on cutting in the area from 50-200 feet from the river), and a prohibition of new septic facilities within 150 feet of the river. These features make Tolland's ordinance the strongest river conservation action implemented by any of the Massachusetts towns on the Farmington. A copy of Tolland's River Protection District is included in **Appendix B**.

Because the shorelands along the Massachusetts Study Segment are predominantly in private ownership, the local regulations are the primary mechanisms for protecting this stretch of the Farmington River from detrimental land uses. These regulations are, therefore, central to the evaluation of the adequacy of protection for the Massachusetts segment. That evaluation, which is the first component of the suitability analysis, is presented in **Subsection 8.2.1: Protection Mechanisms**. The relative strengths and weaknesses of the various local regulations in protecting the river are identified in that subsection. In addition, **Figure 8-1** provides a town-by-town comparison of the local ordinances and other protection mechanisms affecting the segment. Further information and analysis are available in the 1990 Draft Evaluation of Existing Protection.

State Administered Programs

Several programs administered by the Commonwealth of Massachusetts also affect land management and provide significant protection for the Farmington River. The most notable are summarized below.

- **Forest Cutting Practices Act (M.G.L. Chapter 132, Sec. 40-46)**: This statute provides important protection for the Farmington from adverse effects of large-scale commercial timber harvests. The Act requires that any landowner who intends to cut more than 50 cords or 25,000 board feet of wood for commercial purposes must first prepare a cutting plan and have it approved by the Massachusetts Department of Environmental Management. The Act's regulations limit cutting within 100 feet of water bodies to less than 50

percent of the forest. Although there is no requirement for a no-cut buffer, the DEM recommends leaving a 50-foot no-cut area along water bodies.

It is important to note that these regulations apply only to commercial logging operations exceeding 25,000 board feet of timber. Noncommercial cutting, clearing of public ways, cutting of less than 25,000 board feet per cut, and clearing of land for building or cultivation all are exempted from the Act. These activities are, however, still regulated by local conservation commissions under the Wetlands Protection Act, as described above in the discussion of **Locally Administered Programs**. In addition, towns can establish their own regulations limiting timber harvest, as Tolland does through its River Protection District, for instance.

- **Preferential Use Assessment (M.G.L. Chapters 61, 61A, & 61B)**: Preferential or current use assessment allows for reduced taxation of lands that are committed to forestry, agriculture, or recreation/open space uses. If a landowner applies and his/her property meets the criteria for one of these categories, the land is assessed at a value reflecting its current use, rather than its full market value for a more intensive use. The landowner must commit to keeping the land in that same use for a ten year period; if the land is removed from the program or converted to another use during that time, the owner must pay penalty taxes to the town.

  This program plays an important role in sustaining the largely rural and forested landscapes of the Farmington Valley by enabling owners of lands that are rapidly increasing in value to afford to hold onto those lands. As evidence of the attractiveness of the program, in 1990 roughly 7,840 acres in the Farmington River watershed had been enrolled in the "forest land" classification alone. However, enrollment in the program does not ensure guaranteed long-term conservation; the penalties for early withdrawal are not necessarily steep enough to prevent landowners from selling their property for development.

- **State Land Acquisition:** In 1983, the Massachusetts legislature authorized $4 million for land acquisition to facilitate the "preservation and continuation of a wilderness corridor" along the Farmington River. The authorization was divided equally between the Department of Environmental Management and the Division of Fisheries and Wildlife. The latter share never became available for the Farmington, but the DEM has been able to move forward effectively with their part of the program. Thus far, DEM has acquired two important parcels along the study segment in Otis: a 16.9-acre parcel with over 2,000 feet of river frontage, almost all of which is located within the 100-year floodplain; and a 450-acre parcel encompassing an undeveloped forested area with steep slopes and more than 6,000 feet of frontage on the river's east side, and a narrow section with about 600 feet of frontage on the west side. The total cost for these acquisitions was $1.1 million.

- **Federal and State Clean Water Acts (P.L. 95-217; M.G.L. Chapter 131, Sec.40)**: The Massachusetts DEP has a number of responsibilities under the state and federal water pollution control statutes that have a bearing on land use along the river. These include permitting of point source discharges, issuing water quality certifications on proposed discharges, and controlling non-point source pollution. These responsibilities are described in the "Water Quality" portion of **Subsection 4.1.2: Water Resources Management**.

- **Massachusetts Environmental Policy Act (MEPA) (M.G.L. Chapter 30, Sec. 61-62H)**: This statute is modeled after the National Environmental Policy Act (NEPA), and requires all state agencies to review the environmental impact of major state actions and consider alternatives. As stated in the Act, "all agencies, departments, boards, commissions and authorities of the Commonwealth shall review, evaluate, and determine the impact on the natural environment of all works, projects or activities conducted by them and shall use all practicable means and measures to minimize damage to the environment." For any project covered by the Act, an "Environmental Notification Form" (ENF) describing the environmental impacts must be filed with the MEPA unit in the Executive Office of Environmental Affairs (EOEA). Following public comment, EOEA officials determine whether the project is of sufficient magnitude to require the preparation of a full "Environmental Impact Report" (EIR), which further evaluates the project's environmental consequences and adequacy of mitigation measures. The Act's associated regulations establish specific thresholds for different types and sizes of projects that automatically require preparation of an ENF or EIR.

  It is important to note that any type of permit or license required for a project by any state agency is considered a state action and subject to the Act. However, permits granted by local boards (e.g., conservation commissions, boards of health, etc.) under state authorizing statute do not constitute state actions unless someone appeals the local decision to the MassDEP.

Federally Administered Programs

- **Clean Water Act/Section 404 (P.L. 95-217)**: Section 404 affects land management along the river by requiring any project that would discharge dredged or fill material into the river or an adjacent wetland to receive a permit from the Army Corps of Engineers

(in consultation with the U.S. Environmental Protection Agency [EPA]). This program is described further in the "Channel, Banks, and Wetlands" portion of **Subsection 4.1.2: Water Resources Management.**

Physical Limitations to Development

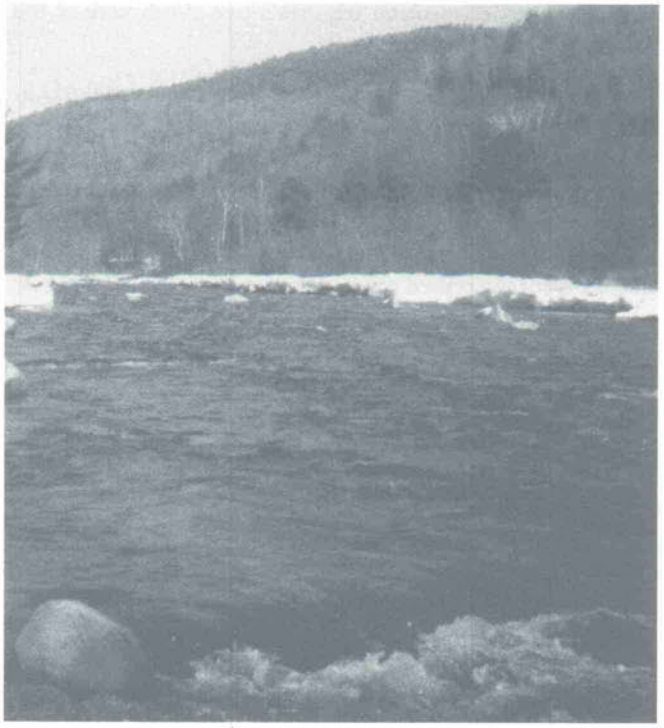
In addition to the protections provided by the programs described above, the Massachusetts section of the Farmington River receives an important measure of protection from physical characteristics that limit the development potential of the private lands in the river corridor.

Natural features, including wetlands, steep slopes, and soils that are unsuitable for individual septic systems, serve as a significant constraint to development in many locations along the segment. Wetlands surround the river for much of the uppermost one and one-half miles of the study area immediately below the Hayden Pond Dam. Steep slopes descend virtually to the river's edge along large sections of the segment. This is the case along much of the eastern shore in the lower half of the stretch in Otis, and is even more pronounced on both sides of the river through much of Sandisfield and Tolland. In fact, more than one-third of Sandisfield's 8.6 miles of total river frontage is bordered by slopes steeper than 25 percent. While these steep slopes do significantly limit the likelihood of construction, they are generally heavily forested; intensive logging, particularly along the immediate shorelands, could have serious impacts on the river.

Many areas along the segment, including those with steep slopes and near wetlands, have thin and/or poorly drained soils that are unsuitable for individual septic systems. Because none of the three towns abutting the study segment has a municipal sewage treatment system, these unsuitable soils have become the single factor preventing development of certain locations.

Road access also plays an important role in limiting potential development along parts of the segment. Although Route 8 does parallel the river along the west side for most of the study segment, the lack of road access along much of the east side has significantly reduced the development pressure on that shoreline. This is most noteworthy for much of the stretch in Otis, which otherwise could be vulnerable to a considerable amount of development, logging, and other activities that could have an impact on the river.

Conversely, the river also receives a form of protection in areas where Route 8 closely parallels the western shoreline. In many locations this has resulted in narrow parcels between the road and the river that are undevelopable, thereby ensuring that at least the immediate shoreline will retain a certain amount of natural character and buffering capacity. However, the proximity of Route 8 does create the potential for water quality problems resulting from runoff from the road surface.



Adjacent public lands are an important factor in maintaining the undeveloped character of the Massachusetts Study Segment.

Public Lands

The Massachusetts Study Segment receives significant protection from the public conservation lands located along it. As with private lands, the state and federal programs described above help to ensure the conservation of public lands along the Massachusetts segment. Physical limitations further constrain potential uses of public lands in some locations. However, the primary factors influencing the use of public lands are the policies and practices applied by the agencies charged with management of these lands.

As shown earlier in **Figure 2-2** and **Map 2-1**, roughly 27 percent of the frontage in Massachusetts is in public ownership; virtually all of those public holdings are dedicated for conservation-related purposes and are protected from development or intensive land uses. (The only exceptions are small parcels owned by the Towns of Otis and Sandisfield for municipal purposes and the Massachusetts Department of Public Works in Otis for salt and equipment storage. Together, these parcels only account for about 5.2 acres and 1,175 feet, or 0.9 percent, of the total frontage along the segment.)

The largest parcels of protected open space along the segment are in the Otis, Sandisfield and Tolland State Forests, all of which have substantial river frontage. These lands are managed for multiple uses, including the wildlife habitat, recreation, hunting, and the harvest of firewood, saw timber, and mountain laurel. These activities do not have an appreciable effect on the river. The state forest lands are considered well protected from future development because Article 97 of the

Massachusetts Constitution requires a two-thirds vote of the Legislature to sell any state forest.

The Hartford Metropolitan District Commission and the U.S. Army Corps of Engineers also own sizeable tracts at the downstream end of the Massachusetts segment. These lands, which were acquired in conjunction with the development of the West Branch Reservoirs, are also protected from intensive development. The land owned by the MDC is managed specifically for watershed protection and is restricted from sale by Connecticut state statutes.

Collectively, the extensive tracts of public conservation lands are the best-protected lands in the Massachusetts study area and have contributed significantly to the continued natural character of the river valley.

(Refer to **Subsection 2.1.4: Land Ownership** and **Subsection 2.1.5: Land Use** in for additional information on the public lands in the study area.)

4.1.2 Water Resources Management

While locally administered programs and regulations are of primary importance for land management along the Massachusetts segment, state and federally administered statutes and programs provide the foundation for management and protection of the Farmington's instream/water resources. Nonetheless, local land use regulations are significant for certain water resource issues, particularly the control of non-point source pollution and the protection of the riverbanks and adjacent wetlands.

The most noteworthy of the local, state, and federal authorities affecting water resource management on the Massachusetts segment are summarized below.

Water Quality

Locally Administered Programs

Several local land use programs provide important protection for the water quality of the Massachusetts segment, particularly from non-point source pollution. The most significant are those related to wetlands, septic systems, subdivisions, and floodplains. The state authorizing statutes and the specific regulations adopted by the individual towns are described above in the "Private Lands" portion of **Subsection 4.1.1: Land Management**; the strengths and weaknesses of those regulations are evaluated in the first part of the suitability analysis for the Massachusetts segment, presented in **Subsection 8.2.1: Protection Mechanisms**.

State Administered Programs

- **Federal and State Clean Water Acts (P.L. 95-217; M.G.L. Chapter 131, Sec. 40)**: The federal and state water pollution control statutes provide substantial protection for the Farmington River's water quality by regulating all discharges to the river through several different programs. The Massachusetts Department of Environmental Protection directly administers the state statute and, through delegation from the U.S. EPA, the federal law as well. The MassDEP's major responsibilities under these statutes include the following:

  (1) Establishment of statewide water quality standards: These standards designate water quality goals and designated uses for different classes of water bodies, and establish base level criteria that must be met to maintain the designated uses for each class. The standards form the basis from which a state's regulatory decisions on water quality are made.

  As required under the statutes, the MassDEP has established a statewide anti-degradation policy that protects high quality waters from being degraded to the base level of their classification. The specific application of this standard to the Farmington River is discussed below.

  (2) Project review and certification under Sec. 401 of the federal Clean Water Act: Section 401 requires that any proposed discharge into the waters of a state must receive a water quality certificate from that state before any necessary federal permits or licenses can be granted. This requirement makes Section 401 certification a strong tool for the state because it ensures that federally-approved projects must meet the state's water quality standards. Certification must be related directly to impacts on water quality; however, a 1994 U.S. Supreme Court decision held that water quantity is inseparable from water quality, and therefore certifications can legally include requirements related to water quantity provided they have some connection to the state's water quality standards.

  (3) Point source discharge permits: Sec. 402 of the federal Clean Water Act establishes a permit system — the "National Pollution Discharge Elimination System" (NPDES) — for all point source discharges, such as new or expanded discharges from sewage treatment plants and industrial facilities. Storm water discharges also are regulated under Sec. 402. The NPDES permit system provides an additional mechanism for the state to ensure that a proposed point source discharge will not violate the specific water quality standards established for the river basin in question.

  (4) Non-point source pollution control: The federal and state statutes also establish limited regulatory authority and encourage planning efforts for the reduction of non-point source pollution.

  The EPA oversees implementation of the Clean Water Act in Massachusetts. The agency maintains

approval/veto authority over the state's water quality standards and permitting of specific projects under Sec. 402, but not over state certifications under Sec. 401.

The MassDEP has classified the entire length of the Farmington River in Massachusetts as Class B, "fishable and swimmable." The agency's current anti-degradation policy for the river provides strong protection to its high quality waters, but does not guarantee protection from future discharges. The policy prohibits new discharges unless a variance is granted by the MassDEP. Variances can be granted if a proposed discharge meets three tests: (1) "socioeconomic" review, in which the agency determines that the social and economic benefits of the project to the public outweigh the impacts of the discharge; (2) "highest and best technology" review, in which the agency determines that the applicant will use the highest and best technology available (usually meaning secondary or tertiary treatment) and has evaluated alternatives; and (3) "water quality" review, in which the agency determines that the project will not lower the water quality of the river.[22]

- **Other Authorities:** Certain other state administered programs (such as the Forest Cutting Practices Act, Preferential Use Assessment, State Land Acquisition, and Massachusetts Environmental Policy Act) also play a role in protecting water quality in the Massachusetts segment. These are described above in the "Private Lands" portion of **Subsection 4.1.1: Land Management**.

Federally Administered Programs

- **National Wild and Scenic Rivers Act (P.L. 90-542, as amended):** The protection of the Wild and Scenic Rivers Act (prohibiting any federally licensed, permitted, or funded water resource project that would have a direct and adverse effect on the river's outstanding resources) was in place for the duration of the study period for both the Massachusetts and the Connecticut study segments. As a designated Wild and Scenic River, the Connecticut segment will receive this protection permanently. Although the Massachusetts segment was not proposed for designation, the protection afforded to the Connecticut segment will extend to any federally assisted water resources project in Massachusetts that would have a significant effect on the river's outstanding values in Connecticut. Any project that would reduce the quality of water flowing into the designated segment downstream will be of particular concern.

Specific provisions for implementing the permanent protection for the Connecticut segment are described later in this chapter in **Subsection 4.2.2: Water Resources Management.** Should the Massachusetts segment be designated at some point in the future, detailed provisions similar to those in effect for the Connecticut segment would be applied to the Massachusetts segment as well.

- **Clean Water Act/Section 404:** The authority and responsibilities of the U.S. Army Corps of Engineers and the U.S. EPA under Sec. 404 are described later in this Subsection under **Channel, Banks and Wetlands.**
- **National Environmental Policy Act (P.L. 91-190):** NEPA provides a limited amount of protection for the Farmington by requiring federal agencies to evaluate the environmental impact of proposed major federal actions, to consider less environmentally damaging alternatives, and to solicit public comment on the proposal. However, NEPA cannot guarantee protection of the river because it does not require agencies to pursue the most environmentally sensitive alternative or the one most favored by the public.

Water Quantity

Flows in the Massachusetts segment are not managed on a continual basis through deliberate releases from impoundments upstream of the segment or on its tributaries. However, as described in **Subsection 2.2.3: Hydrology**, the Farmington's flows are influenced to varying degrees by the following: the largely unmanaged releases from Hayden Pond in Otis; autumn releases from Otis Reservoir into the Fall River, which have a brief but substantial effect on the lower half of the study segment; and the management of dry flood control dams on a number of tributaries by the U.S. Soil Conservation Service, which results in short-term reductions of flow in the West Branch during very wet periods.

Otis Reservoir is managed by the Massachusetts Department of Environmental Management primarily to serve reservoir recreation, fisheries, flood control, and the reservoir's shorefront property owners. The reservoir is drawn down annually during two fall weekends to create storage capacity for spring runoff and to prevent winter damage to private docks from ice movement. The resulting releases into the Fall River average roughly 220 cfs, and substantially increase flows in the Farmington at a time when the river is usually running at very low levels. The releases, which the DEM coordinates with recreational groups, provide enough water in the West Branch for intensive white water recreation during a period when other rivers in the region are too low for boating.

In addition to these direct influences on river flows, there are a number of state and federal laws and regulations that have a bearing on water quantity in the Massachusetts segment. These programs are summarized below.

[22] Discussions are currently underway between the Massachusetts DEP and the Connecticut DEP to evaluate whether the existing anti-degradation standard in Massachusetts adequately protects the high water quality and designated uses of the river in Connecticut.

Occasional releases from Otis Reservoir into the Fall River, shown here, provide a substantial contribution to flows in the Massachusetts segment.

State Administered Programs

- **Interbasin Transfer Act (M.G.L. Chapter 21, Sec. 8B-D)** regulates any proposal to withdraw more than 1 million gallons per day from a river for an out-of-basin use. Permits are granted only if all efforts have been made to develop local water sources within the "receiving basin," all practical water conservation measures have been taken, and reasonable minimum stream flows will be protected. In essence, interbasin transfers are treated as a "last resort" possibility; very few have been permitted in the Commonwealth since the enactment of this law in 1983.
- **Water Resources Management Planning Regulations (313 CMR 2.00)** require the development of river basin plans that are to be considered in all state agency decisions relating to water resources management in each watershed. Among other components, each plan must establish a minimum stream flow threshold to protect fish, wildlife, and related uses. Withdrawals that would reduce flows below the minimum threshold would not be allowed.

  Because there are no existing or proposed withdrawals or discharges affecting the Farmington River in Massachusetts, the Department of Environmental Management has determined that a full-fledged basin plan is not needed at this time. However, the agency has gathered information that provides a hydrological baseline of current conditions in the Farmington River basin.
- **Water Management Act (M.G.L. Chapter 21G)** regulates the allocation of water within a river basin. Permits for withdrawals are issued depending upon the availability of water in the basin, and new withdrawals are precluded if they would exceed the "safe yield" for the river. Thus, the process protects minimum instream flows by ensuring that the river will not be overallocated.
- **Clean Water Act/Section 401**: The state's authority under Sec. 401 to require a water quality certification for any proposed discharge is described earlier in this Subsection under **Water Quality**. The recent Supreme Court decision referred to in that section has affirmed states' authority to deny certification to projects affecting water quantity if the flow levels (discharges) released from such projects would impinge upon the designated uses and water quality criteria established in the state's water quality standards. This is potentially a powerful new tool for states to use in regulating projects that have significant effects on water quantity.
- **Massachusetts Environmental Policy Act**: See the description provided above in the "Private Lands" portion of **Subsection 4.1.1: Land Management**.

Federally Administered Programs

- **National Wild and Scenic Rivers Act**: See the description provided earlier in this Subsection under **Water Quality**. With designation of the Connecticut segment as a Wild and Scenic River, any federally assisted water resources project in Massachusetts that would reduce the quantity of water flowing into the designated area downstream will be of particular concern.
- **Clean Water Act/Section 404**: The authority and responsibilities of the U.S. Army Corps of Engineers and the U.S. EPA under Sec. 404 are described immediately below under **Channel, Banks and Wetlands**. The jurisdiction of those agencies would extend to cover any project affecting water quantity in the Farmington if that project involved the discharge of dredged or filled material into the segment or an adjacent wetland.
- **National Environmental Policy Act**: The responsibilities of federal agencies under NEPA are described earlier in this Subsection under **Water Quality**.

Channel, Banks and Wetlands

Locally Administered Programs

The natural appearance and function of the river's channel, banks, and adjacent wetlands receive important protection through several local land use programs. The most noteworthy include municipal floodplain, wetland, subdivision and zoning regulations. The specific regulations adopted by each of the study area towns are summarized in the "Private Lands" portion of **Subsection 4.1.1: Land Management**; the strengths and weaknesses of those regulations are evaluated in the first part of the suitability analysis for the Massachusetts segment, presented in **Subsection 8.2.1: Protection Mechanisms.**

State Administered Programs

- **Clean Water Act/Section 401**: The state's water quality certification authority under Sec. 401 provides an additional measure of protection to the Farmington's channel, banks and adjacent wetlands for any proposed project potentially affecting them that would require a federal permit or license (such as a Section 404 permit, as described below). The specific provisions of the state's Section 401 jurisdiction are described earlier in this Subsection under **Water Quality.**

- **Waterways Act (M.G.L. Chapter 91)**: This law enables the MassDEP to regulate construction within the high water area of the Farmington and other rivers in the Commonwealth.[23] Before building in the river, a project proponent must obtain a license from the MassDEP. Issuance of the license is dependent upon the project's impacts on navigation and public access, and whether a water quality certification has been received.

  The Waterways Act provides an important mechanism to regulate the construction of bridges and other structures in and over the Farmington. A plausible example would be private bridges that might be proposed to reach currently inaccessible areas along much of the east side of the river.

- **Massachusetts Environmental Policy Act**: See the description provided above in the "Private Lands" portion of **Subsection 4.1.1: Land Management.**

Federally Administered Programs

- **Clean Water Act/Section 404**: Section 404 provides protection to the physical character of the Farmington River by requiring any project that would discharge dredged or fill material into the river or an adjacent wetland to receive a permit from the Army Corps of Engineers (in consultation with the U.S. EPA). This permitting requirement affects both temporary and permanent projects. In the permitting process, the project's potential impacts to aquatic resources and its ability to serve the public interest are evaluated according to EPA guidelines. The guidelines prohibit fill discharges when less environmentally damaging and practicable alternatives exist.

  Most construction activities affecting the river or adjacent wetlands would be subject to a Sec. 404 permit because they typically involve what would be considered a "discharge of dredged or fill material." Examples include: placement of fill (rock, sand, dirt or other material) needed for the construction of a structure, impoundment, intake or discharge pipe, etc.; site development fill for industrial or recreational uses; dams and dikes; riprap; and subaqueous utility lines.

  Because Section 404 authority is so encompassing, the Army Corps has developed "regional," "nationwide," and "programmatic general" permits for minor projects that meet specified criteria. These projects do not need to go through the more rigorous individual permitting process. However, the Corps' guidelines require individual permits for all projects that would be located "in a component of the Wild and Scenic Rivers System." With designation of the Connecticut segment, the Corps will apply a screening procedure for projects on tributaries to the designated area — including the Massachusetts segment — that would otherwise qualify for a nationwide permit but that could adversely affect the designated stretch.

- **National Wild and Scenic Rivers Act**: See the description provided earlier in this Subsection under **Water Quality.** With designation of the Connecticut segment as a Wild and Scenic River, any federally assisted water resources project that would affect the Massachusetts segment's channel, banks, or wetlands and reduce the quality or quantity of water flowing into the designated area downstream will be of particular concern.

- **National Environmental Policy Act**: The responsibilities of federal agencies under NEPA are described earlier in this Subsection under **Water Quality.**

[23] The MassDEP has asserted its authority under the Waterways Act on the Farmington River from the confluence with Dimmock Brook in Otis downstream. The agency chose Dimmock Brook as the cutoff point because the river upstream was considered too small for navigation (one of the fundamental criteria for application of the Act) and there was no history of licenses having been issued above that location.

4.2 Connecticut Study Segment

4.2.1 Land Management

Private Lands

As in Massachusetts, the majority of the shorelands along the Connecticut Study Segment (approximately 51.5 percent) are in private ownership. Thus, the laws and regulations that govern the use of private lands are critical to the management and protection of the river in Connecticut. As is the case in Massachusetts (as well as in most of New England), the primary responsibility for regulating land use in Connecticut rests with the local communities through their implementation of a number of state and federal statutes. The most important of these programs are described in the next part of this Subsection.

In addition to the locally administered programs that are of primary importance, there are certain statutes and programs having a bearing on land use along the Connecticut segment that are administered directly by state and federal agencies. These programs are summarized after the description of locally administered programs.

The private lands section concludes with a brief description of the physical characteristics found along the Connecticut segment that limit the potential for intensive development of the shorelands, which thereby further protect the river from degradation.

Locally Administered Programs

Following are summaries of the most important statutes and programs affecting land management that are implemented primarily at the local level.

- **Inland Wetlands and Watercourses Act (C.G.S. 22a-36 et seq.)**: This statute provides significant protection for Connecticut's rivers by prohibiting most activities involving dredging, filling, altering or polluting of a wetland or watercourse without the issuance of a permit from the local inland wetlands commission.[24] Each local inland wetland commission is required to adopt boundary maps delineating "regulated areas," which must include all wetlands and watercourses in the town. A commission may expand its regulated areas beyond actual wetlands and watercourses to include buffers of adjacent non-wetland areas. These buffer areas are not protected by the Act, but rather represent areas of expanded regulation in which activities are evaluated only for their impact on an actual wetland or watercourse.

  The level of scrutiny a project receives can vary substantially depending on the inland wetlands commission's decision of whether the proposed project constitutes a "significant activity;" i.e., one that could have a potentially significant impact on a wetland or watercourse. All "significant activities" must have a public hearing, and generally receive a much higher level of review for potential environmental impacts.

  The Act gives strong enforcement powers to the local commissions by allowing them to issue cease and desist orders, to order that violations be corrected, and to levy substantial fines. The Connecticut DEP can enforce the Act if a local commission fails to do so, but it cannot override a commission's regulatory decisions.

  If properly enforced, the Act has the ability to provide thorough protection for wetlands. The Act's strong points include: one of the most comprehensive wetland definitions in the country (based on soils); mapping of all wetlands, watercourses and regulated areas; the ability to regulate projects beyond the actual wetland boundary; and a strong technical assistance program for local commissions.

  Implementation of the Act has presented certain challenges in the study area towns. Several of the volunteer commissions do not have paid enforcement staff nor sufficient time and expertise to thoroughly evaluate many of the detailed engineering studies produced by developers; this has resulted in some enforcement problems. Also, many small projects that are determined not to be a "significant activity" do not receive a full environmental review, and are permitted as is or perhaps with conditions. Thus, although the Act is strong in not generically exempting projects below a certain threshold, the local determination on the significance of a project can have much the same effect. The Act also has limitations in the extent to which it can be used to restrict vegetation cutting in regulated areas. Anything short of a total clear cut is not automatically a regulated activity, and therefore may be beyond the jurisdiction of the local commission. In addition, the Act is rarely used to protect the recreational and aesthetic values of wetlands or watercourses. Rather, the focus is usually limited to evaluating the impacts of proposed projects on the hydraulics or water quality of the wetland or watercourse in question.

  Overall, the Inland Wetlands and Watercourses Act provides significant protection for the Farmington's water quality, but is more limited in its ability to protect the natural character of the shorelands.

- **Connecticut Public Health Code (Sections 19-13-B100 to 19-13-B104)**: The Public Health Code establishes minimum standards for the siting and

[24] In Connecticut, wetlands are defined on the basis of soil types, and include those designated as "poorly drained, very poorly drained, alluvial, and floodplain," while watercourses are defined as any body of water, standing or flowing, natural or artificial. (C.G.S. Sec. 22a-38(15) & (16))

design of septic systems. The most important standard for the protection of the Farmington River is the requirement that new septic facilities and leach fields must be set back at least 50 feet from all open watercourses. In addition, requirements for percolation tests, deep observation holes, and construction specifications all must be satisfied and inspected by a sanitary agent of the Farmington Valley Health District (FVHD) before a "permit to discharge" will be granted by the District. Implementation of the program by professional staff of the Health District is an important distinction between Connecticut's septic regulations and the "Title V" regulations in Massachusetts, which are implemented by volunteer local health boards.

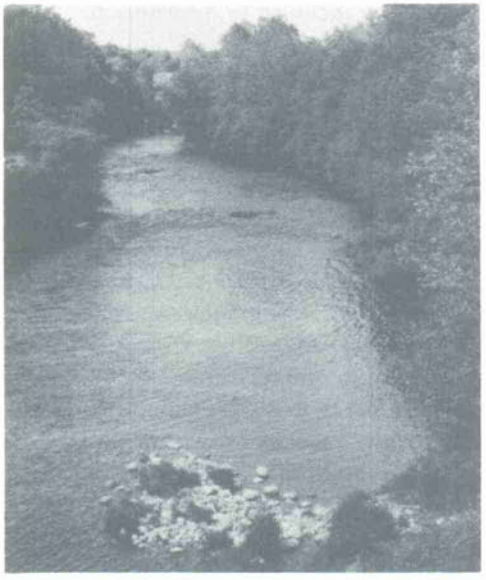
- **Soil Erosion and Sediment Control Act (C.G.S. 22a-325 et seq.)**: This program protects the Farmington from erosion and sedimentation impacts associated with construction and new developments. Any project that will disturb more than one-half acre of soil must receive town certification (typically from the planning and zoning commission or inland wetlands commission) of a soil erosion and sediment control plan before construction. Such plans must conform to specific performance standards and techniques that are intended to "result in a development that minimizes erosion and sedimentation during construction; is stabilized and protected from erosion when completed; and does not cause off-site erosion and/or sedimentation." Also, towns are encouraged to develop standards for storm water management, but are not required to do so under the Act.

- **Public Act 490 (C.G.S. 12-107a-e)**: This is similar to "current use assessment" programs in other states (for instance, the Chapter 61 program in Massachusetts), although that name is not formally applied to the program in Connecticut. Landowners who participate in the program receive reduced tax assessments in return for committing to keep undeveloped lands in that condition. Lands are classified as "forestland," "farmland," or "open space" under the Act, and are assessed based on the "use value" in that condition rather than on the full fair market value as if they were to be developed. The landowner must commit to keeping the land in its present use for a ten year period; if the land is sold or converted to a more intensive use during that time, the landowner must pay considerable conveyance taxes.

  This program provides an important financial incentive to encourage landowners to keep land from being developed. It has been widely used in the Farmington Valley: as of 1990, more than 500 acres in the immediate corridor along the Connecticut Study Segment were enrolled in the program.[25] These open lands contribute significantly to the natural character of the area.

- **National Flood Insurance Program**: All five of the study area towns in Connecticut have established floodplain regulations pursuant to the NFIP.[26] In addition, the Town of Hartland has gone substantially beyond the minimum requirements of the NFIP to prohibit all building in the 100-year floodplain. See the description of this program in the "Private Lands" portion of **Subsection 4.1.1: Land Management** for the Massachusetts Study Segment for additional details.

- **Municipal Land Use Statutes**: The Connecticut **Zoning Act (C.G.S. 8-1 et seq.)**, the **Subdivision Control Law (C.G.S. 8-25)**, and other enabling laws give towns almost complete authority to regulate land use as they see reasonable for ensuring the general health, welfare, and safety of the public. These authorizing statutes will not be reviewed in this section; rather, the focus will be on the specific zoning and subdivision regulations adopted by the study area towns pursuant to the enabling statutes.



New shorelands zoning ordinances adopted by the Connecticut study towns provide strong protection for the river corridor. This view is looking upstream from the Route 20 bridge in Riverton.

Under the various authorizing statutes described above, all of the Connecticut towns in the study area have established regulations that provide protection either directly or indirectly for the Farmington River and its adjacent lands. These include ordinances regulating wetland disturbance, building in floodplain areas,

[25] This figure only includes parcels enrolled in the Public Act 490 program near the river in Hartland, Barkhamsted, and Canton. Statistics on the amount of riparian land enrolled in the program in New Hartford were not available.

[26] In Connecticut, the local planning and zoning commissions are responsible for implementing the National Flood Insurance Program.

septic system installation, density and type of development, subdivisions, erosion and sedimentation control, sand and gravel extraction, and forestry practices.

In addition to their underlying regulations, each of the towns abutting the Connecticut segment adopted specific zoning improvements during the Wild and Scenic River Study that are sufficiently important in protecting the river that they deserve special recognition. In 1991 and 1992, the four towns — Hartland, Barkhamsted, New Hartford, and Canton — each adopted a "River Protection Overlay District" as an overlay to its zoning regulations. These districts prohibit new structures, new septic systems, and sand and gravel operations within a 100-foot buffer on both sides of the river, and establish strict limitations on vegetation removal in that area. The districts provide strong, uniform protection along the entire length of the segment for the immediate shorelands, which are the most critical to the health of the river itself. Copies of the four towns' River Protection Overlay Districts are included in **Appendix B.**

Because the majority of the shorelands along the Connecticut Study Segment are in private ownership, the local regulations are the most important mechanisms for protecting this stretch of the Farmington River from detrimental land uses. They are, therefore, central to the evaluation of the adequacy of protection for the Connecticut segment. That evaluation, which is the first component of the suitability analysis, is presented in **Subsection 8.3.1: Protection Mechanisms.** The relative strengths and weaknesses of the various local regulations in protecting the river are identified in that subsection. In addition, **Figure 8-2** provides a town-by-town comparison of the local ordinances and other protection mechanisms affecting the segment. Further information and analysis are available in the 1990 Draft Evaluation of Existing Protection.

State Administered Programs

Several programs administered by the State of Connecticut also affect land management and provide significant protection for the Farmington River. The most notable are summarized below.

- **Federal and State Water Pollution Control Statutes (P.L. 95-217; C.G.S. 22a-416 et seq.):** The Connecticut DEP has a number of responsibilities under the state and federal water pollution control statutes that have a bearing on land use along the river. These include permitting of point source discharges, issuing water quality certifications on proposed discharges, and controlling non-point source pollution. These responsibilities are described below in the "Water Quality" portion of **Subsection 4.2.2: Water Resources Management.**

- **Inland Wetlands and Watercourses Act (22a-36 et seq.):** This statute authorizes the DEP to regulate activities conducted by any state agency on riverfront lands that would affect the watercourse or associated wetlands. In such instances, the DEP solicits input from the local inland wetlands commission.

- **Flood Management Act (C.G.S. 25-68b et seq.):** This statute authorizes the DEP to regulate state agency activities within or affecting floodplains. The program is described below in the "Channel, Banks and Wetlands" portion of **Subsection 4.2.2: Water Resources Management.**

- **State Land Acquisition:** In 1987, the Connecticut General Assembly established the "Recreation and Natural Heritage Trust Program" (C.G.S. 23-73 et seq.) to ensure the long-term protection of important natural resources through state land acquisition. The program, administered by the DEP, has been used to protect two adjacent parcels of important riverfront land in Hartland. These parcels, which were acquired for a total of $325,000, cover 123 acres and approximately 3,000 feet of frontage on the West Branch. In addition to setting aside valuable pieces of riparian land, the acquisitions have provided additional public access and a potential site for an educational center and a trout and salmon rearing facility.

- **Connecticut Environmental Policy Act (CEPA) (C.G.S. 22a-1 et seq.):** CEPA is largely modeled after its federal counterpart, NEPA, and requires all state agencies to review the environmental impacts of major state actions and to consider alternatives. For projects covered under the Act, the agency in question must prepare an environmental assessment (EA); if the EA concludes that the project "may significantly affect the environment," then the agency is required to conduct a more full-blown environmental impact evaluation (EIE). The EIE must document potential impacts of the activity, alternatives, and mitigating measures. The EIE must be made available for public review and receive approval from the Office of Policy and Management before the project can occur.

  While CEPA is a good tool for increasing public and agency awareness about the potential impacts of major state activities, it does have certain limitations. Much like NEPA, the Act requires agencies to evaluate impacts and alternatives and provide for public participation; however, it does not compel agencies to pursue the most environmentally sensitive alternatives. Unlike its Massachusetts equivalent (MEPA), CEPA does not consider state permits to constitute state actions. As a result, only projects conducted directly by a state agency or receiving state funding trigger CEPA review. Also, many state projects are generically excluded from CEPA review.

- **Other Authorities:** Certain other state administered programs also could have an effect on land use along the Connecticut segment. These include the DEP's responsibilities for the regulation of hazardous waste storage under the **Storage of Hazardous Wastes Near Watercourses Act** (C.G.S. 22a-134p(a) et seq.), and the **State Siting Council**'s jurisdiction regarding the location of hazardous waste/low-level radioactive waste storage, energy plants, and telecommunications facilities pursuant to C.G.S. 22a-114 et seq., 22a-163 et seq., and 16-50g et seq.

Federally Administered Programs

- **Clean Water Act/Section 404 (P.L. 95-217):** Section 404 affects land management along the river by requiring any project that would discharge dredged or fill material into the river or an adjacent wetland to receive a permit from the Army Corps of Engineers (in consultation with the U.S. EPA). This program is described above under "Channel, Banks, and Wetlands" in **Subsection 4.1.2: Water Resources Management** for the Massachusetts segment.

Physical limitations to development — such as the steep-sided walls of Satan's Kingdom — provide an important measure of protection to the Connecticut segment.

Physical Limitations to Development

In addition to the protection provided by the programs described above, the Connecticut study segment receives an important measure of protection from certain physical characteristics of the river corridor that limit the development potential of privately owned shorelands.

In Hartland, there is essentially no developable private land immediately adjacent to the river. Along most of the west side, the lack of road access and steep slopes render the shorelands undevelopable. On the east side, Hogback Road parallels the river at a short distance, and the land in between is either in the 100-year floodplain (which is precluded from development under Hartland's regulations) or a classified wetland (riverwash soils).

Natural features play less of a role in limiting potential development along the river in Barkhamsted, but there are few opportunities for new development in that town for other reasons. As discussed further in the next part of this Subsection, only 38 percent of Barkhamsted's 12 miles of river frontage is privately owned. Those private lands are located in or near the villages of Riverton and Pleasant Valley, and most have already been developed. Thus, the potential for future subdivision and development is severely limited.

Physical limitations provide the least amount of protection for the river as it flows through New Hartford, but much of the private land in the town has already been developed. In one important undeveloped area on the eastern shoreline extending for about three-quarters of a mile below the confluence with the East Branch, steep slopes descend to the riverbank. A small local road also closely parallels the river in this area, isolating the immediate shorelands from any development that might occur on the hillside. In the heart of the scenic and heavily used Satan's Kingdom gorge, extremely steep slopes provide an important natural barrier to roads, structures, or essentially any other potential activity . The physical conditions in the area effectively isolate the shorelands downstream of the gorge for another half-mile as well.

Little development potential also exists along Canton's 1.16 miles of shoreline on the east side of the river. Seventy-six percent of the developable lots in this area already have structures on them. These are small (1-2 acre) lots and, in accordance with the town's zoning regulations, cannot be further subdivided and developed.

Public Lands

The extensive public lands along the Connecticut segment that are dedicated for conservation purposes are crucial to the long-term protection of the river and the maintenance of the rural character of the upper Farmington Valley. These lands, which cover approximately 48.5 percent of the shorelands along the segment, are the best protected of any lands in the study area from development or intensive land uses.

As is the case in Massachusetts, state and federal programs affecting private land management also help to ensure the conservation of public lands in Connecticut. Physical features of the river corridor also limit the potential uses of these lands. But clearly the most important factors influencing the use of public lands are the policies and practices applied by the agencies charged with management of those lands.

The three state forests in the area (American Legion, Peoples, and Nepaug) combine to form the largest public holdings, accounting for more than 27 percent of the entire frontage on the segment. The state forests are managed by the Connecticut DEP for multiple uses, including wildlife habitat, water quality, a variety of recreational activities, and the harvest of firewood, saw timber, and mountain laurel. Transfer of these lands to another agency or sale to private owners is highly unlikely because they have been dedicated specifically for conservation purposes.

The Hartford Metropolitan District Commission also owns several large parcels that encompass more than 20 percent of the shorelands along the segment. The largest of the MDC's parcels on the segment, the Greenwoods parcel located in Barkhamsted and New Hartford, includes an important floodplain area and provides extensive access to the river. The MDC leases this land to the DEP for fishing, hunting, and other public recreational uses. The MDC also owns three large riparian parcels near the beginning of the segment in Hartland.

The MDC's lands are managed for multiple uses, including water quality protection, recreational access, timber harvest, and sand and gravel removal. The more intensive of these uses have been managed so as to avoid detrimental effects on the river. Transfers of the utility's lands are governed by state statute and its charter according to the following provisions:

1. Most of the MDC land on the segment is Class I watershed land. Under C.G.S. 25-32(a)-(e) and 25-37c,d, these lands are precluded from sale except to another water company or a municipality, unless the classification of the land is changed.
2. Even if the classification of these lands is changed to a less stringent level, the MDC's Charter restricts the sale of any parcel greater than 10 acres in its existing reservoir system unless it is for "continued public use" or approved by referendum in the MDC's eight member towns.

The last piece of public land on the segment — a small parcel owned by the Town of New Hartford that is managed as a local park — provides important public access to the east side of the river.

(Refer to **Subsection 2.1.4: Land Ownership** and **Subsection 2.1.5: Land Use** in for additional information on the public lands in the study area.)

4.2.2 Water Resources Management

As is the case in Massachusetts, state and federally administered statutes and programs are of greater importance for the management and protection of the Farmington River's instream/water resources in Connecticut than are locally administered programs. Nonetheless, local land use regulations are significant for certain water resource issues, particularly the control of non-point source pollution and the protection of the riverbanks and adjacent wetlands.

The most noteworthy of the local, state, and federal authorities affecting water resource management on the Connecticut Study Segment are summarized below.

Water Quality

Locally Administered Programs

- **Municipal Land Use Regulations:** Several local land use programs provide important protection for the water quality of the Connecticut segment, particularly from non-point source pollution. The most significant include the River Protection Overlay Districts and regulations related to wetlands, septic systems, subdivisions, and floodplains. The state authorizing statutes and specific regulations adopted by the individual towns are described above in the "Private Lands" portion of **Subsection 4.2.1: Land Management**; the strengths and weaknesses of those regulations are evaluated in the first part of the suitability analysis for the Connecticut segment, presented in **Subsection 8.3.1: Protection Mechanisms.**
- **Municipal Sewerage Systems Statute (C.G.S. 7-245 et seq.):** Under this law, each town is empowered to establish a local water pollution control authority. This board is responsible for preparing a local water pollution control plan, and for managing the town's sewage treatment plant if one exists. In carrying out these responsibilities, the board can take strong steps to protect riparian water quality through such actions as developing and implementing a sewer avoidance program for specific areas and ensuring effective management of on-site facilities — including requirements for periodic inspection and maintenance of on-site sewage disposal systems.

  Of the four towns abutting the segment, only New Hartford and Canton have established local water pollution control authorities, and New Hartford has the only municipal sewage treatment plant that

directly affects the segment. (Canton's facility is located downstream of the segment.) As with all municipal facilities, the New Hartford plant must comply with the DEP's water quality standards, regulations, and permitting requirements.

State Administered Programs

- **Federal and State Water Pollution Control Statutes (P.L. 95-217; C.G.S. 22a-416 et seq.)**: Two laws govern the protection of water quality in Connecticut: the federal Clean Water Act, and the state's Water Pollution Control Statutes. The Connecticut DEP directly administers the state statutes and, through delegation from the U.S. EPA, the federal law as well.

  The federal and state laws provide substantial protection for the Farmington River's water quality by regulating all discharges to the river through several different programs. Much as described in the "Water Quality" portion of **Subsection 4.1.2: Water Resources Management** for the Massachusetts segment, the Connecticut DEP has four primary responsibilities under the statutes:

  (1) Establishment of statewide water quality standards;

  (2) Project review and certification under Sec. 401 of the Clean Water Act;

  (3) Permitting of point source discharges and storm water discharges;

  (4) Non-point source pollution control.[27]

  The upper Farmington River in Connecticut is currently designated as Class A (suitable for drinking water supply) from the Goodwin Dam downstream to the confluence with the Still River, and as Class B (suitable for fishing and swimming) for the remainder of the study segment. For Class A waters, the DEP's general anti-degradation policy prohibits point source discharges "unless a temporary discharge is necessary to remediate an existing surface or groundwater pollution problem" or "the discharge consists of clean water, treated backwash waters from public or private drinking water treatment systems or dredging and dredged material dewatering operations and does not result in violation of Class A standards." The policy requires that Class B waters be maintained at their existing high quality unless a lowering of water quality "is necessary to accommodate overriding economic and social development which the Commissioner [of the DEP] has determined is clearly in the public interest, and...existing uses will be protected fully."

  However, during the development of the Upper Farmington River Management Plan, the DEP committed to amend the Connecticut Water Quality Standards, including the anti-degradation policy, with a special provision for the upper Farmington (see **Chapter 7**). This new provision will prohibit new discharges from sewage treatment plants or industrial sites into the segment or its tributaries, and will allow increases in the volume of existing discharges only if they are accompanied by improved treatment so that pollutant loading to the river is not increased.[28]

  With respect to storm water discharges, the DEP has established general permits for projects associated with two types of activities: (1) construction projects that involve the disturbance of greater than five acres of land; and (2) industrial facilities, as defined by the Standard Industrial Classification (SIC) Codes. Applicants are covered by these general permits if they register with the DEP, but they must be able to demonstrate that they are in compliance with the general permit requirements. The permits require, among other things, that the permittee develop a pollution prevention plan and monitor the discharge. The DEP cannot deny a registration; however, the agency can enforce the permit requirements if the permittee is found to be in violation.

  In the Upper Farmington River Management Plan, the DEP also agreed to establish a new standard for storm water discharges and other activities regulated under Section 402 of the Clean Water Act. This standard establishes "Best Management Practices" as a condition for the registration of any new activities of this nature that would discharge directly into the segment.

  To address non-point source pollution problems, the DEP developed a statewide program described in Non-Point Source Pollution: An Assessment and Management Plan (February 1989). In that document, the agency identified 65 recommendations specific to national non-point source categories, and 25 actions designed to enhance non-point source management in Connecticut's statewide water quality management programs. The Plan emphasizes existing regulatory mechanisms, and focuses on water quality and water resource management, potable water supplies, management of hazardous materials and solid wastes, and local land use management.

[27] The EPA oversees implementation of the Clean Water Act in Connecticut and maintains approval/veto authority over the state's water quality standards and permitting of specific projects, but not over Sec. 401 certifications.

[28] Implementation of this new provision may require a change in state statute. Also, the provision includes an exception that allows for minor increases in the concentration of innocuous water quality parameters that are not detrimental to the aquatic environment. See the Upper Farmington River Management Plan for details.

The DEP has supplemented this program for the Farmington by pledging to establish Best Management Practices as a condition for applicable permits for projects involving non-point source pollution within 100 feet on both sides of the segment.

Collectively, the special provisions applied to the Connecticut segment by the DEP provide very strong protection from potential water quality degradation, and clearly demonstrate the agency's commitment to protecting the river.

- **Other Authorities**: The state has certain other regulatory responsibilities that could affect water quality in the Connecticut segment. Two such programs are the DEP's regulation of the storage of hazardous substances near the river under the **Storage of Hazardous Wastes Near Watercourses Act** (C.G.S. 221-134p(a) et seq.), and the **State Siting Council's** jurisdiction regarding the location of hazardous waste/low-level radioactive waste storage, energy plants, and telecommunications facilities pursuant to C.G.S. 22a-114 et seq., 22a-163 et seq., and 16-50g et seq.

  Also, any proposed project affecting water quality that would be conducted by a state agency or receive state funding could trigger the requirements of the **Connecticut Environmental Policy Act**. This statute is described above in the "Private Lands" portion of **Subsection 4.2.1: Land Management**.

Federally Administered Programs

- **National Wild and Scenic Rivers Act**: As a designated Wild and Scenic River, the Connecticut segment will receive permanent protection under the Act from any federally assisted water resources project that would have a direct and adverse effect on its outstanding values. The Upper Farmington River Management Plan contains detailed provisions describing how the protections of the Act will be implemented for proposed projects that could affect water quality in the designated segment. These provisions are summarized in the synopsis of the Management Plan presented in **Chapter 7**.

- **Clean Water Act/Section 404**: The authority and responsibilities of the U.S. Army Corps of Engineers and the U.S. EPA under Sec. 404 are described in the "Channel, Banks and Wetlands" portion of **Subsection 4.1.2: Water Resources Management** for the Massachusetts segment. The jurisdiction of those agencies would extend to cover any project affecting the Farmington's water quality through the discharge of dredged or filled material into the river itself or an adjacent wetland.

- **National Environmental Policy Act**: The responsibilities of federal agencies under NEPA are described under "Water Quality" in **Subsection 4.1.2: Water Resources Management** for the Massachusetts segment.

Water Quantity

River flows in the Connecticut Study Segment are largely controlled by releases from the West Branch Reservoirs. These releases are regulated in accordance with a complicated set of legal agreements and statutory requirements, as summarized below.

Flows in the Connecticut Study Segment are largely controlled by releases from the West Branch Reservoirs in accordance with a complicated set of legal and statutory requirements.

Goodwin Dam. Constructed between 1955 and 1960 by the Hartford MDC for future water supply purposes, the Goodwin (or "Hogback") Dam releases water directly into the Connecticut Study Segment. The MDC is required to release water from this dam in accordance with Connecticut General Statutes, a riparian agreement with the Farmington River Power Company (which operates a hydroelectric facility downstream at Rainbow Dam),[29] and an agreement with the "Allied Connecticut Towns" (a group of communities located downstream of the dam). The MDC also operates a hydroelectric facility in the dam, and must comply with associated regulatory requirements of the Federal Energy Regulatory Commission. The instantaneous releases required under these arrangements these include the following:

[29] The riparian agreement between the MDC and the Farmington River Power Company was last revised on July 13, 1961. The original agreement dates from 1911 and 1925.

* minimum release of 50 cfs at all times, as required by state statute;
* additional release of all natural inflow up to 150 cfs;
* additional release of all waters released from Otis Reservoir; and
* additional release of up to 300 cfs upon request by the Farmington River Power Company.[30]

Of these requirements, the one with the greatest impact on flows in the Connecticut segment is the riparian agreement with the Farmington River Power Company. In conjunction with the instantaneous flow provisions listed above, this agreement requires the MDC to release up to 21.7 billion gallons of water per year upon request, or to pay the company for whatever water is not provided up to that total. The riparian releases can be made from the West Branch, Barkhamsted, East Branch Compensating,[31] or Nepaug Reservoirs, and are delivered according to the following general schedule:

May 15 - October 31:	17.4 billion gallons
November 1 - March 15:	4.3 billion gallons plus deficit from preceding period up to 3 billion gallons
March 16 - May 14:	no riparian releases

To illustrate the contribution the riparian releases make to flows in the river, during the four-year period from 1987-1990, riparian requests averaged roughly 190 cfs/month from May 15 to October 31, and 70 cfs/month from November 1 to March 15. Excluding the months during those periods when no requests for water were made, the actual requests ranged from 100 to 300 cfs, with an average request of 210 cfs in the summer interval and 184 cfs in the winter interval.

Colebrook Dam. Located immediately upstream of the Goodwin Dam and Reservoir, the Colebrook (or "Colebrook River") Dam was constructed by the U.S. Army Corps of Engineers for flood control and water supply purposes, and began operation in 1969. The dam is operated jointly by the Corps and the MDC, which has established a hydroelectric facility in the structure. While the Colebrook Dam discharges into the Goodwin Reservoir rather than directly into the Farmington River, it does influence flows in the river downstream. Extra capacity was built into the Colebrook Reservoir to provide fishery flows for the river in April and May (to enhance the shad fishery) and in August, September and October (to enhance the sea run brown trout fishery). These flows, which are passed through the Goodwin Dam, are dictated by the Connecticut DEP and coordinated with the Corps.

[30] The MDC also provides special recreational releases, if possible, when requested by canoeing and kayaking groups.

[31] The East Branch Compensating Reservoir is also referred to as "Lake McDonough."

In addition to these flow management requirements, there are a number of other laws and regulations affecting water quantity in the Connecticut Study Segment. These are described below.

State Administered Programs

- **Connecticut Plan for Public Water Supply Coordination (C.G.S. 25-33 et seq.):** In 1985, the Connecticut General Assembly established a long-range, statewide water supply planning process under the administration of the Department of Health Services. This is the state's official process that will be used to evaluate whether withdrawals from the West Branch of the Farmington may be needed to meet future water supply needs. The overall program and the relevant documents that have been produced for the Farmington basin are described in detail in **Section 5.1: Water Supply Issues.**
- **Water Diversion Policy Act (C.G.S. 22a-365 et seq.):** This statute, adopted by the Connecticut General Assembly in 1982, was designed to protect the state's water resources and to ensure the balancing of different needs in the allocation of water within any particular basin. The Act establishes that any water diversion must be "necessary" and compatible with the state's long range water resource planning for the basin, and must reflect a balance among the needs for public water supply, water quality, waste assimilation, flood management, water-based recreation, wildlife habitat, agriculture, fish and wildlife, and low flow requirements. The law requires a permit from the DEP for any withdrawal of surface or ground water greater than 50,000 gallons per day, or for any construction (such as a dam) that would change the instantaneous flow of any water of the state. In addition to evaluating the factors listed above, the DEP considers whether the applicant has adequately addressed the following: thorough exploration of alternatives, including conservation; implementation of conservation measures; and initiation of public information programs on conservation techniques. In general, the DEP's review emphasizes the following sequence: (1) avoid adverse effects of any diversion; (2) minimize any unavoidable effects; and (3) pursue mitigation of unavoidable effects.
- **Clean Water Act/Section 401:** The states' authority under Sec. 401 to require a water quality certification for any proposed discharge is described in the discussion of "Water Quality" for the Massachusetts segment in **Subsection 4.1.2: Water Resources Management.** The recent Supreme Court decision referred to in that section has affirmed states' authority to deny certification to projects affecting water quantity if the flow levels (discharges) released from such projects would impinge upon the designated uses and water quality

criteria established in the state's water quality standards. This is potentially a powerful new tool for states to use in regulating projects that have significant effects on water quantity.

- **Water Supply Emergencies:** Connecticut has two statutes that address this issue: **Water Supply Emergency (C.G.S. 22a-378)**; and **Public Drinking Water Supply Emergency (C.G.S. 25-32b)**. Under the first statute, if a water supply emergency is declared by the governor or otherwise according to law, the Commissioner of the DEP is empowered to: (1) suspend existing diversion authorizations for up to sixty days; and (2) authorize diversions without the usual permitting requirements for up to ninety days. The second statute authorizes the Commissioner of the Department of Health Services (DOHS), in consultation with the DEP and the Public Utilities Control Authority, to declare a public drinking water supply emergency. Under those circumstances, the Commissioner of DOHS may authorize the sale, supply, or taking of any waters for up to 180 days. The definition of a "public drinking water supply emergency" in the statutes includes the contamination of water, the failure of a water supply system, or the shortage of water.

- **Other Authorities:** In addition to the state's other water resource policies and programs, the Connecticut General Assembly has established two statewide planning processes that have a bearing on water quantity management in the river: (1) the **Long Range Plan for Management of Water Resources (C.G.S. 22a-352)**; and (2) the **State Plan of Conservation and Development (C.G.S. 16a-24 et seq.)**. Both of these programs are administered by the Office of Policy and Management (OPM). The significance of the upper Farmington River is recognized in the current "Plan of Conservation and Development," which identifies the segment as a preservation area. The "Long Range Plan for Management of Water Resources" has not yet been completed. Many of the Plan's components have been finished, but completion of the overall effort was put on hold while the statewide water supply planning process is still underway. The results of that process are intended to be eventually integrated into the Long Range Plan.

  Also, any proposed project affecting water quantity that would be conducted by a state agency or receive state funding could trigger the requirements of the **Connecticut Environmental Policy Act**. This statute is described above under "Private Lands" in **Subsection 4.2.1: Land Management.**

Federally Administered Programs

- **National Wild and Scenic Rivers Act:** As a designated Wild and Scenic River, the Connecticut segment will receive permanent protection under the Act from any federally assisted water resources project that would have a direct and adverse effect on its outstanding values. The Upper Farmington River Management Plan contains detailed provisions describing how the protections of the Act will be implemented for proposed projects that could affect water quantity in the designated segment. These provisions are summarized in the synopsis of the Management Plan presented in **Chapter 7**.

- **Clean Water Act/Section 404:** The authority and responsibilities of the U.S. Army Corps of Engineers and the U.S. EPA under Sec. 404 are described in detail in the discussion on "Channel, Banks and Wetlands" for the Massachusetts segment in **Subsection 4.1.2: Water Resources Management.** The jurisdiction of those agencies would extend to cover any project affecting the Farmington's water quantity if that project involved the discharge of dredged or filled material into the river itself or an adjacent wetland.

- **National Environmental Policy Act:** The responsibilities of federal agencies under NEPA are described in the discussion of "Water Quality" for the Massachusetts segment in **Subsection 4.1.2: Water Resources Management.**

Channel, Banks and Wetlands

Locally Administered Programs

The natural appearance and function of the river's channel, banks, and adjacent wetlands receive important protection through several local land use programs. The most noteworthy include the River Protection Overlay Districts and floodplain, wetland, subdivision and zoning regulations. The specific regulations adopted by each of the study area towns are summarized in the "Private Lands" portion of **Subsection 4.2.1: Land Management**; the strengths and weaknesses of those regulations are evaluated in the first part of the suitability analysis for the Connecticut segment, presented in **Subsection 8.3.1: Protection Mechanisms.**

State Administered Programs

- **Clean Water Act/Section 401:** The state's water quality certification authority under Sec. 401 provides an additional measure of protection to the Farmington's channel, banks and adjacent wetlands for any proposed project potentially affecting them that would require a federal permit or license (for instance, a Section 404

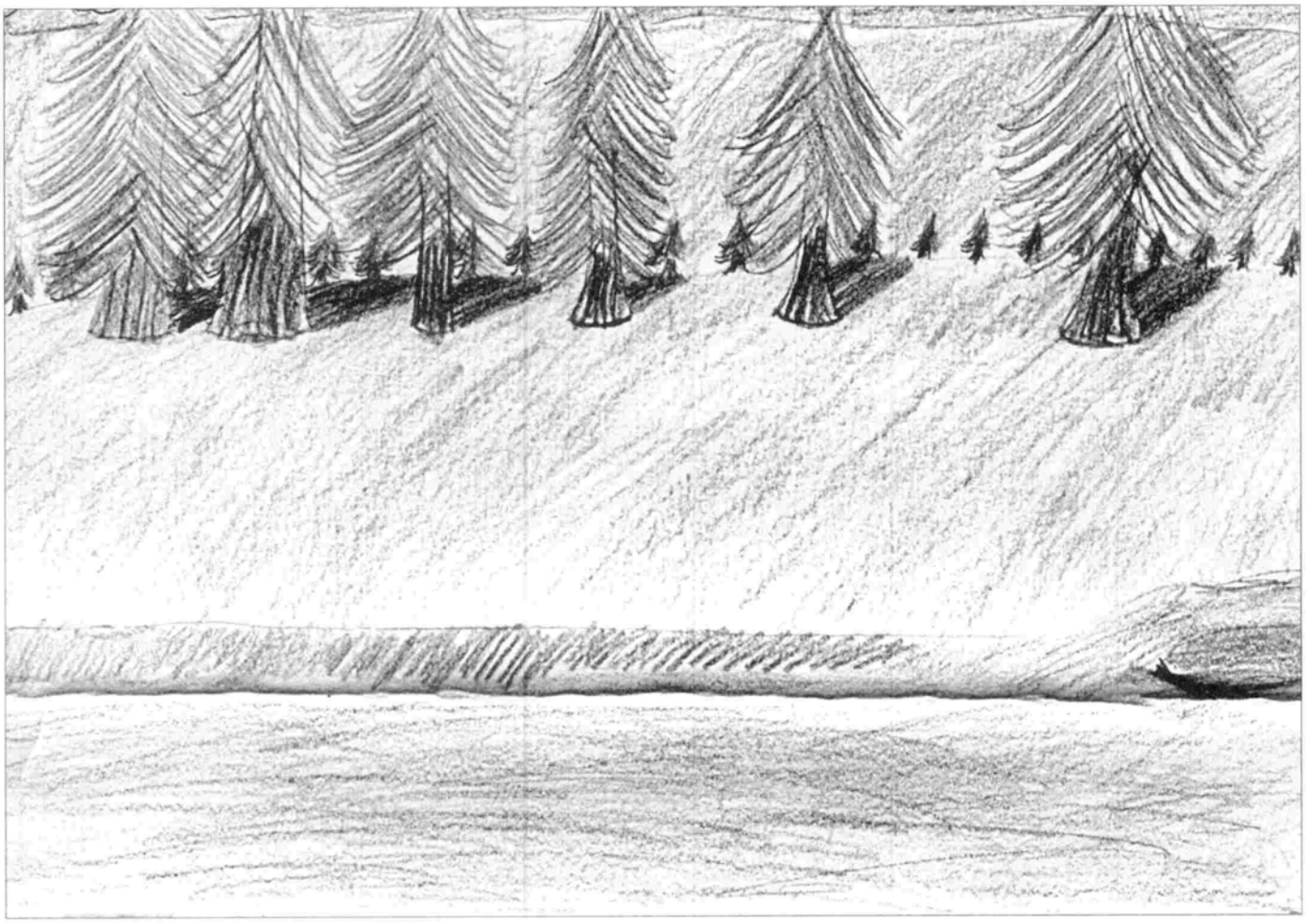
permit, as described below). The specific provisions of states' Section 401 jurisdiction are described in the discussion on "Water Quality" for the Massachusetts segment in **Subsection 4.1.2: Water Resources Management.**

- **Other Authorities**: Connecticut has several other statutes that potentially have a bearing on the physical character of the river's channel, banks, and adjacent wetlands. These include the following:
  - * **Inland Wetlands and Watercourses Act (C.G.S. 22a-36 et seq.)**, which authorizes the DEP to regulate activities conducted by state agencies that would affect a river or wetland;
  - * **Flood Management Act (C.G.S. 25-68b et seq.)**, which authorizes the DEP to regulate activities conducted by state agencies within or affecting floodplains;
  - * **Construction Over or Adjacent to Streams Act (C.G.S.13a-94)**, which requires the Connecticut Department of Transportation to refer plans for state highways and bridges near streams to the DEP; and
  - * **Dams and Reservoir Safety Act (C.G.S. 22a-401 et seq.)**, which authorizes the DEP to regulate the construction, repair or alteration of dams, reservoirs, and similar structures.

  Also, any proposed project affecting the river's channel, banks, or wetlands that would be conducted by a state agency or receive state funding could trigger the requirements of the **Connecticut Environmental Policy Act**. This statute is described above in the "Private Lands" portion of **Subsection 4.2.1: Land Management.**

Federally Administered Programs

- **Clean Water Act/Section 404**: The significant authority and responsibilities of the U.S. Army Corps of Engineers and the U.S. EPA with respect to projects affecting the river's channel, banks and wetlands under Sec. 404 are described in the discussion of "Channel, Banks and Wetlands" for the Massachusetts segment in **Subsection 4.1.2: Water Resources Management.**
- **National Wild and Scenic Rivers Act**: As a designated Wild and Scenic River, the Connecticut segment will receive permanent protection under the Act from any federally assisted water resources project that would have a direct and adverse effect on its outstanding values. The Upper Farmington River Management Plan contains detailed provisions describing how the protections of the Act will be implemented for proposed projects that could affect the channel, banks, and adjacent wetlands of the designated segment. These provisions are summarized in the synopsis of the Management Plan presented in **Chapter 7.**
- **National Environmental Policy Act**: The responsibilities of federal agencies under NEPA are described under "Water Quality" for the Massachusetts segment in **Subsection 4.1.2: Water Resources Management.**



Chapter 5: Water Resources Studies

I think we should save the West Branch of the Farmington River because the fish and other animals will die and some people like to eat them.

One time we went fishing and caught lots of fish and we put them back. Although I like to fish we always put them back.

Kelly Follert

This chapter describes two water resources studies that were important components of the Farmington River Study. First, information is presented on the future water supply needs of the greater Hartford area, including whether withdrawals from the Farmington River's West Branch might be needed to meet future demands. This information was requested by the U.S. House of Representatives' Committee on Interior and Insular Affairs in the Committee Report that accompanied the legislation authorizing the Wild and Scenic River Study.

The chapter's second section provides a detailed summary of a comprehensive "instream flow study" that was conducted for the two study segments. The Instream Flow Study was initiated to determine the flows needed to maintain the Farmington's fisheries, recreation, and scenic resources, and to evaluate whether sufficient water is available in the Farmington basin under different rainfall conditions to allow for limited water withdrawals without adversely affecting those resources. The study participants recognized that answers to those questions were necessary in order to evaluate whether any withdrawals could be compatible with Wild and Scenic River designation, or, put differently, how federal designation might affect potential withdrawals. The full report of the Instream Flow Study, entitled An Instream Flow Study of the Mainstem and West Branch of the Farmington River (June, 1992), is published separately as a companion document to this report.

The reader should keep in mind that, to date, the discussion of potential use of the West Branch for water supply has focused on withdrawals from the Goodwin and Colebrook Reservoirs. While withdrawals from those reservoirs could have an effect on the West Branch and main stem in Connecticut, they would not affect the river upstream in Massachusetts. As a result, most of the information presented in this chapter is relevant primarily to the Connecticut Study Segment. However, the Instream Flow Study did include collection and analysis of baseline data on the health of the aquatic system in the Massachusetts Study Segment. The methodology and results of those efforts are included in the summary of the Instream Flow Study, presented in **Section 5.2**.

5.1 Water Supply Issues

5.1.1 Overview

As explained in **Chapter 1: Introduction and Background**, concern about the effects of potential water withdrawals from the West Branch of the Farmington River for Hartford's water supply was the primary issue that stimulated local interest in pursuing Wild and Scenic River designation. More specifically, in 1981 the Hartford Metropolitan District Commission proposed a diversion to connect the West Branch Reservoirs with the Barkhamsted Reservoir on the Farmington's East Branch, which provides the bulk of the MDC's existing supply. At that time, the MDC saw a growing need for water to augment their existing supplies. Following a contentious public debate, the diversion proposal was rejected in a referendum of the MDC's eight member towns. However, considerable discussion and concern about the proposal continued into the mid-1980's.

In the Congressional hearings on the Wild and Scenic River Study legislation in 1985 and 1986, there was further debate about the future water supply needs of the greater Hartford area and whether West Branch withdrawals would be necessary to meet those needs. As a result, in authorizing the Farmington River Study, the U.S. House of Representatives' Committee on Interior and Insular Affairs directed that the study address the issue of potential water supply needs:

> The Committee heard testimony that expressed concern for the possible need of the greater Hartford area to divert water from that portion of the Farmington River included in the authorized study during times of severe drought. While the Committee believes the information provided during hearings casts doubt on such claims it is in order to direct the Secretary's attention to this possible problem...The Committee notes that Connecticut has an ongoing comprehensive study to develop a master plan for future management of potable water resources and urges the Secretary to coordinate closely with the State during the Wild and Scenic River Study and to provide information on water supply needs as part of the study. (House Interior and Insular Affairs Committee Report #503).

In response to the latter part of this mandate, the NPS entered into a cooperative agreement with the University of Massachusetts' Water Resources Research Center (UMass/WRRC) in 1987 to conduct an independent analysis of the water supply needs of the greater Hartford area. The NPS and UMass/WRRC agreed that this could be achieved most appropriately and most efficiently through a review of the MDC's and the State's most current planning documents, rather than by having the WRRC conduct new primary research or a separate planning effort.

At the time when the NPS-UMass/WRRC cooperative agreement was initiated, the MDC and the other water utilities in north-central Connecticut were in the early stages of implementing the comprehensive water supply planning process referred to by the House Interior Committee. This statewide process, officially named "The Connecticut Plan for Public Water Supply Coordination," was authorized by the Connecticut General Assembly in 1985. Under the program, the state was divided into seven planning regions, and a

"Water Utility Coordinating Committee" (WUCC) was established for each region. On a region-by-region basis, each water utility is required to prepare a 50-year water supply plan; each WUCC is then responsible for overseeing the preparation of a "Coordinated Water System Plan," which integrates the individual utility plans into a comprehensive regional plan. Both the individual utility plans and each Coordinated Water System Plan must receive approval from the Connecticut Department of Health Services (DOHS), with concurrence from the DEP. Recognizing that water supply planning is a dynamic process, the authorizing statute requires regular review and revision of both the individual utility plans (on a 3-5 year basis) and the regional plans (on a 10-year basis).

Both the MDC service area and the Farmington basin are located in the "Upper Connecticut River Water Supply Management Area." Beginning in 1987, this region became the second in the state to move forward in developing the required individual and regional plans.

As part of that process, the MDC developed an initial individual utility plan, entitled The Metropolitan District Water Supply Strategic Plan (February, 1989). Several entities, most notably the Connecticut DEP and the Farmington River Watershed Association, provided extensive comments on that plan during the formal comment period. As part of its obligation under the cooperative agreement with the NPS, UMass/WRRC also conducted an independent analysis of the plan, and provided comments to the Study Committee.

The DEP, the FRWA, and UMass/WRRC expressed a number of common concerns about the Strategic Plan, including issues related to its analysis and estimation of future demand, its deemphasis of groundwater and conservation alternatives, and its reliance on the West Branch reservoirs to meet future water supply needs. In order to assist the Study Committee and the public in understanding the plan and the various comments on it, a matrix was prepared that presented the plan's major elements side-by-side with the related comments of the DEP, the FRWA, and UMass/WRRC.

The MDC's final Individual Water Supply Plan, released in August, 1990, responded to many of those concerns. The final plan puts considerably more emphasis on developing groundwater sources and achieving specific conservation goals before using the West Branch Reservoirs. The plan does identify a potential need for the use of up to 20 million gallons per day (mgd) from the West Branch Reservoirs sometime after 2010; however, this is considered to be a "last resort" option.

The MDC's Individual Water Supply Plan was approved by the DOHS in September, 1991. Because the MDC is the largest utility in the Upper Connecticut River Water Supply Management Area, its Individual Plan will be a central part of the overall "Coordinated Water System Plan" for the region. That regional plan, entitled the Integrated Report for the Upper Connecticut River Water Supply Management Area, has yet to be adopted, pending the completion and approval of individual plans for several other utilities in the planning area. When the Integrated Report receives final approval, it and the MDC's Individual Water Supply Plan will constitute the official documents on future water needs and potential supply sources for the greater Hartford area.

The major elements of the MDC's final Individual Plan are summarized in the next Subsection of this chapter. In addition, the matrix mentioned above was amended to include an additional column that reflects the major elements of the final plan. This matrix, which is included in **Appendix C**, illustrates the evolution that occurred between the Strategic Plan and the final Individual Plan, and the ways in which the earlier concerns about the Strategic Plan were addressed.

In light of the completion and approval of the MDC's Individual Water Supply Plan, it was determined that further analysis of water supply needs in the context of the Wild and Scenic River Study was unnecessary. Instead, the Study Committee agreed that priority should be given to conducting an independent evaluation to determine first, the flows needed to protect the Farmington's instream resources, and second, whether sufficient water is available in the Farmington basin to protect those resources while allowing for limited withdrawals, if they are, in fact, ever needed for additional water supply. The Study Committee ultimately was successful in securing funding for this effort, and the resulting comprehensive "instream flow study" is summarized in **Section 5.2.**

5.1.2 Summary of the MDC's Individual Water Supply Plan [32]

The MDC's Individual Water Supply Plan (IWSP) consists of two parts. The first describes the utility's current water supply system; the second presents a strategic plan for meeting water supply needs through 2030, the end of the state-mandated planning period.

With respect to the current situation, the MDC serves about 400,000 residential customers and commercial, industrial, and municipal users in twelve municipalities surrounding and including the City of Hartford.[33] All of the District's water to meet this demand comes from surface water reservoirs on Farmington River tributaries — the Barkhamsted Reservoir on the East Branch, and the Nepaug Reservoir on the Nepaug River. The safe yield of this system (the amount of water that may safely be withdrawn in a 1 in 100-year drought

[32] Summary derived from "The Metropolitan District Water Supply Plan: Executive Summary" (October 1, 1991), and "Comparative Comments on the MDC's Individual Water Supply Plan" from the revised matrix summarizing comments by the DEP, FRWA, and UMass/WRRC on the MDC's Strategic Plan.

[33] The MDC serves most of the cities of Hartford and East Hartford and the towns of Windsor, Newington, Bloomfield, West Hartford, Rocky Hill, Wethersfield, and Glastonbury. It also serves small sections of South Windsor, Farmington, and East Granby.

[99 percent dry year]) is 68 million gallons per day.[34] Of that total, 46.5 mgd comes from the Barkhamsted Reservoir and the remaining 21.5 mgd comes from the Nepaug Reservoir. Average daily demand in 1989 was 60.18 mgd, giving the system an apparent margin of safety of 12 percent. However, if an unused legal obligation of 5 mgd to New Britain is factored in, the margin of safety drops to 4 percent.

In the development of the regional Integrated Report, the MDC was assigned an "Exclusive Service Area"; this area, which generally coincides with the MDC's existing area of service, was used as the basis for the utility's projections of future demand. In its final Individual Plan, the MDC projects a growth in the population served in its Exclusive Service Area to approximately 510,000 people by 2030. Concurrently, the utility projects an increase in water consumption to roughly 83 mgd by 2030. (See **Figures 5-1** and **5-2**.)

To meet the projected water supply demand through 2030, the MDC's final plan specifies a four-pronged strategy (in order of priority):

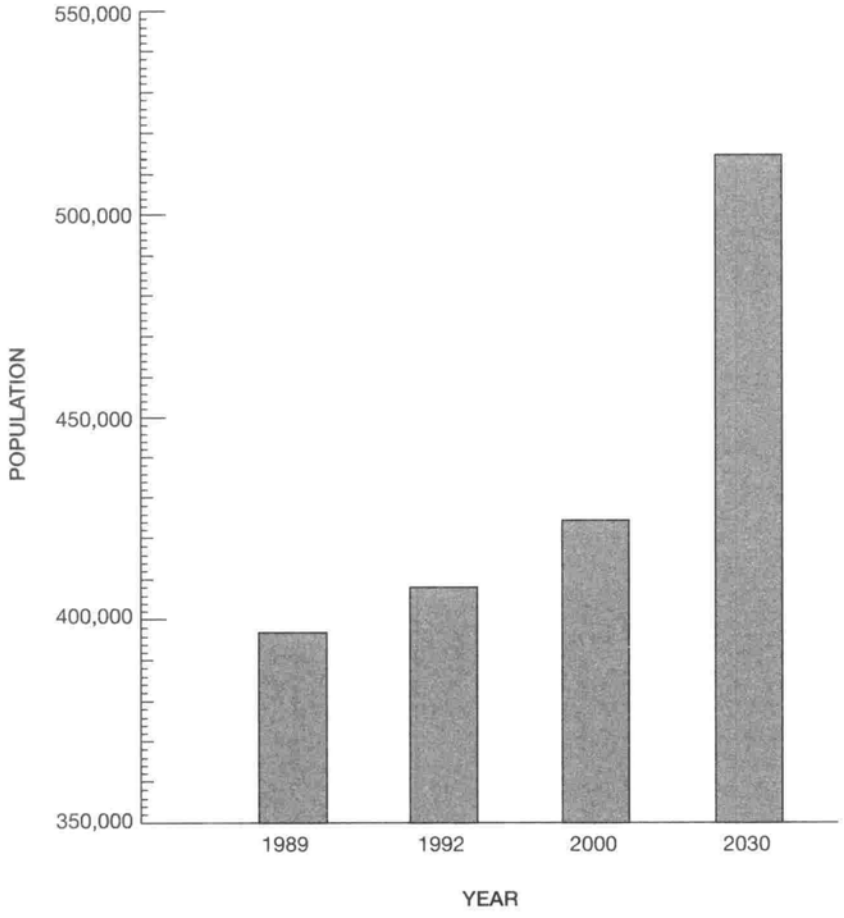
(1) Augmentation of existing sources;

(2) Water conservation;

(3) Groundwater exploration and development;

(4) Further use of available surface water (i.e., the West Branch Reservoirs).

FIGURE 5-1
Population Estimated to be Served in the MDC Exclusive Service Area



(Source: "The Metropolitan District Water Supply Plan — Executive Summary"; October 1, 1991)

First, the IWSP identifies an additional 6 mgd that will be obtained by changing operating practices at the Barkhamsted and Nepaug Reservoirs. Specifically, the change involves lowering the minimum surface elevations required for each reservoir by 10 feet (to 480 feet at Barkhamsted and 445 feet at Nepaug).

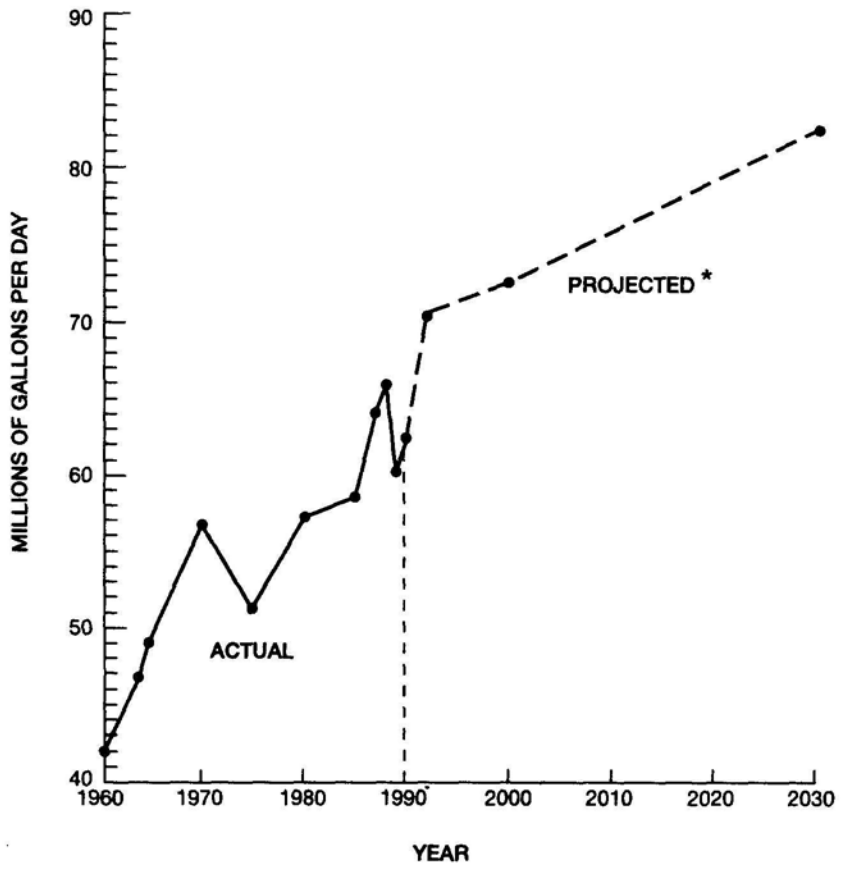
Next, the IWSP identifies a 10 percent conservation target for reducing total water demand, to be achieved and sustained through 2030. This goal, which would amount to a 6 mgd savings, will be pursued primarily through a plumbing retrofit program, public education, and specific conservation efforts tailored for individual non-domestic users. Evidence indicates that the MDC's supply system is already quite efficient (with less than 9 percent loss through leaks and other inefficiencies); therefore, the IWSP does not specify a conservation goal from further reductions of supply losses.

The MDC anticipates producing 10-12 mgd from groundwater sources, specifically through the development of an aquifer in South Glastonbury. Among the many aquifers in the area, only three were considered feasible for development based on potential yield, compatible land use and proximity to its existing water system. Of those three, the South Glastonbury aquifer is the only one for which a specific yield target is set, and the MDC acknowledges that the 10-12 mgd projection from that source is a conservative estimate for planning purposes. The final plan also calls for exploration and development of other aquifers as a potential source of additional supply after 2010.

Finally, the IWSP specifies that surface water will be pursued as a last resort strategy if needed to meet water needs through

[34] The MDC's safe yield calculation is actually based on the drought of the 1960's, which is believed to have been much more severe than the 1 in 100-year event.

FIGURE 5-2
MDC Water Consumption Trends and Projections



(Source: "The Metropolitan District Water Supply Plan — Executive Summary"; October 1, 1991)

* "Projected" consumption includes a 5 million gallon per day commitment to New Britain

2030. The only surface supplies the MDC considers are the two reservoirs on the West Branch of the Farmington River, the Goodwin and Colebrook Reservoirs, which have a combined water supply capacity of 16.5 billion gallons. However, the IWSP reaffirms the MDC's earlier commitment made in the Strategic Plan that "...no use of the Colebrook/West Branch system will occur before: (1) the safe yield of the augmented East Branch system...is exceeded; (2) the range of economically feasible groundwater options is fully evaluated; and (3) conservation potential is thoroughly assessed from a cost-effectiveness standpoint and in terms of expected long-range results." The IWSP also includes reference to the comprehensive Instream Flow Study that was still underway at that time, and indicates the MDC's belief that "as much as 31 cubic feet per second (20 mgd) could safely [i.e., without adversely affecting other high priority uses and the environment of the river'] be used from the West Branch, even during a 99 percent dry year." (The results of the Instream Flow Study, described in the next section of this chapter, indicate that this may indeed be possible, provided that specific conditions are met to ensure the protection of the Farmington River's instream values.)

In summary, the IWSP's integrated long-range plan specifies the following process for meeting demand through 2030 by increasing the system's existing safe yield of 68 mgd:

(1) Change operating practices at the East Branch and Nepaug Reservoirs by lowering the minimum required pool elevation by 10 feet, starting in 1990. This adds 6 mgd to the system, for a total safe yield of 74 mgd.

(2) Develop groundwater to produce a minimum of 10 mgd by 1996, bringing the total safe yield to 84 mgd.

(3) Use either additional groundwater or, if insufficient potable groundwater is obtainable, the Goodwin/Colebrook Reservoir system to provide an additional 8 mgd or mores o m e t i m e after 2010. This would bring the total system safe yield to 92 mgd, which is projected to be sufficient to meet the needs of the Exclusive Service Area through 2030.

This sequencing is shown visually in **Figure 5-3.**

The IWSP states that if the conservation goal is successful in reducing demand by 6 mgd, then the 84 mgd safe yield capacity provided by the first increment of groundwater will be sufficient to meet demand until after 2020. If conservation efforts prove to be even more effective, the tapping of new supplies will be postponed accordingly. (See **Figure 5-3.**)

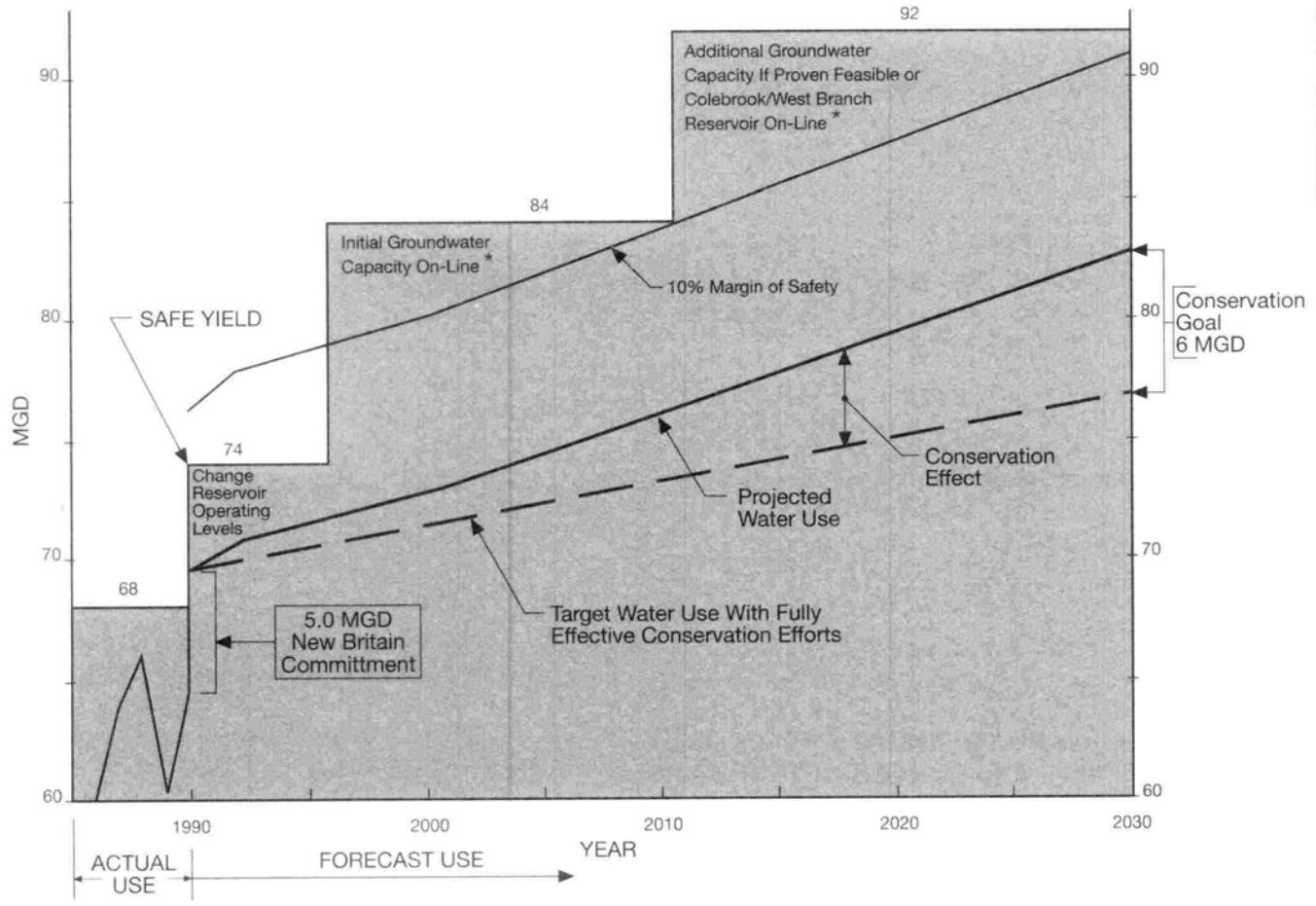
5.2 The Instream Flow Study

5.2.1 Overview

Purpose

The second of the two water resources studies — and by far the more important to the Farmington River Study — was the comprehensive Instream Flow Study initiated by the Study Committee in 1989. This study, which ran until 1992, was designed to provide information on the following questions:

FIGURE 5-3
MDC Water Use/Safe Yield Comparison



➢ How do changes in instream flows affect the Farmington's fisheries, recreation, and scenic resources?

➢ What flows are needed to maintain those resources?

➢ Is there sufficient water in the Farmington Basin under different rainfall conditions to allow for withdrawals from the West Branch in Connecticut while maintaining those resources?

The Study Committee recognized that answers to those questions were central to the long-term management of the river. But more immediately, they were needed to determine whether any withdrawals could be compatible with protection of the river's resources and, if so, with Wild and Scenic River designation.

This section presents a detailed summary of the Instream Flow Study report. When reading this summary, or the final report itself, there are several important points to keep in mind:

➢ **The Instream Flow Study report is an information document rather than a decision-making document.** It provides essential new data for determining the compatibility between water supply withdrawals and instream resource protection. That information will be one factor for decision-makers to consider in making future decisions on withdrawals and many other river management issues. Other factors will include legal and statutory requirements, and the standards for river management incorporated in the Upper Farmington River Management Plan (see **Chapter 7**).

➢ **The results of the Instream Flow Study are directly dependent on assumptions related to a number of factors that are of critical importance to water allocation on the Farmington.** Changing any of those assumptions likely would produce different results. The major assumptions are presented later in this chapter in **Subsection 5.2.5:**

Integration; those assumptions are analyzed in **Subsection 5.2.6: Discussion.**

➢ **The Instream Flow Study is not intended to provide detailed, week-by-week or month-by-month operational regimes for how flows should actually be managed.** Instead, it provides information on whether it is possible to satisfy competing resource demands through any of several hypothetical flow scenarios which look at water availability and flow requirements on an annual basis. If a withdrawal is proposed in the future, the applicant would have to satisfy requirements for applicable state and federal permits and resolve other potential constraints. An essential element for permitting would be the development of a plan for reservoir management, including an operational plan and a detailed flow regime.

The discussion that follows provides an overview of the major components of the Instream Flow Study, including descriptions of the methodologies used, the results obtained, and analysis of what the results mean. A complete description can be found in the final Instream Flow Study report, which is published as a companion document to this report.

Project Administration

The Instream Flow Study was made possible through a cooperative effort among the major participants in the Farmington River Study, and was overseen by the Farmington River Study Committee. The study's direct budget of $160,000 was funded jointly by the Hartford Metropolitan District Commission ($75,000) and Congressional appropriations through the National Park Service ($85,000). In addition, all of the interests involved in the study made substantial in-kind contributions of volunteer and staff time, and other resources.

The Connecticut Department of Environmental Protection administered the project, and contracted with Normandeau Associates, Inc. of Bedford, New Hampshire to conduct the study. A core working group with representatives from the DEP, the MDC, the NPS, the FRWA, and the Commonwealth of Massachusetts was convened to spearhead the resolution of a range of technical concerns (e.g., defining a scope of work; reviewing proposals; selecting a consultant; and addressing unresolved issues that arose during process). In addition, a broader "technical advisory committee," with approximately 20 representatives from 12 additional agencies and organizations, was formed to assist in scoping the project and finalizing the work plan. Normandeau Associates, Inc. prepared the sections on hydrology, aquatic biology/fisheries, and the final integration and analysis, and subcontracted with Land & Water Associates of Hallowell, Maine for the work on recreation and aesthetics.

General Methodology

Following is an outline of the general methodology and approach used by the consultants:

➢ Hydrologic modeling was performed to predict total monthly and annual water yields at various points in the watershed under normal, dry, and drought conditions.

➢ For the Massachusetts Wild and Scenic Study Segment, studies of recreation and aesthetics were conducted to determine the relationship between those resources and different flow levels. However, since flows in Massachusetts are largely naturally occurring and are not regularly controlled by dam releases, an instream flow assessment for fisheries was not conducted. Instead, the consultant evaluated the overall health of the aquatic system through analyses of aquatic invertebrate communities and other habitat characteristics.

➢ For the Connecticut Wild and Scenic Study Segment, the following procedures were performed:

(1) Studies were conducted on the relationships between flows and resource quality and related instream flow needs for fisheries, recreation, and aesthetics.

(2) Flow requirements for other existing uses were compiled (including the 50 cfs minimum release required under state statute; the riparian agreement with the Farmington River Power Company; waste assimilation needs; and the Colebrook Reservoir fisheries enhancement pool).

(3) Annual flow requirements for fisheries and recreation resources were integrated with the other existing annual release requirements listed above to establish total annual release volumes.

(4) The total release requirements and two potential levels of withdrawal were subtracted from the annual watershed yields produced through hydrologic modeling to determine whether all of the demands could be met under normal, dry, and drought conditions.

(5) As a final step, an estimated "flushing flow" volume was subtracted from the annual watershed yields for normal rainfall years.

The fisheries assessment was conducted for the entire length of the Farmington's West Branch and main stem in Connecticut down to the confluence with the Connecticut River. However, due to time and budget constraints and the priority of the Wild and Scenic River Study, the recreational and aesthetic evaluations in Connecticut were restricted to the Wild and Scenic Study Segment.

The remainder of this section provides further description of how the Instream Flow Study was conducted, the results it produced, and how those results were analyzed. Four major topics are addressed: hydrology; aquatic biology; recreation and scenic values; and integration. The section concludes with

a discussion of the study's limitations and its implications for future management of the Farmington River.

5.2.2 Hydrologic Modeling

Purpose and Methods

Hydrologic modeling was necessary for the following reasons: (1) the entire study hinges on having the best possible predictions of how much water will be available in the West Branch Reservoirs in normal, dry, or drought years; and (2) in order to estimate accurately the total flows available in the Farmington's West Branch and main stem downstream of the Goodwin Dam, it was first necessary to determine how much flow is contributed by tributaries downstream of the West Branch Reservoirs during normal, dry and drought conditions.

The basic methodology used was as follows:

(1) The time frame chosen for hydrologic modeling was 1970-1990 — that is, the period since the Colebrook Dam was completed.

(2) Flow data for that period were obtained from USGS gaging station records on the main stem, the West Branch, and the Still River.[35]

(3) Those data were extrapolated into mean monthly flows for each site.

(4) Extrapolations were calculated both for regulated flows (based on actual dam releases from the period of record) and estimated unregulated flows (approximating the natural flows that would have occurred without the dams).

(5) Statistical analysis was then used to develop monthly regulated and unregulated flow predictions at each gage for normal, dry and drought conditions.

(6) The monthly unregulated flow predictions for the Riverton gage ultimately were used as the basis for calculating the total amounts of water available under different rainfall conditions at the Goodwin Dam. The unregulated flows were used for that purpose because they reflect natural flow levels and eliminate any effect of storage in the West Branch reservoirs.

(7) Flow predictions for study sites not near the gaging stations were estimated using data from the nearest gaging station and correcting for differences in drainage area between the study site and the gaging station.

Results

The results of the statistically generated predictions of both regulated and unregulated flows at various points in the watershed are shown, respectively, in Tables 3-1 and 3-2 on pages 30-33 of the final Instream Flow Study report. The total amounts of water available under different rainfall conditions at the Goodwin Dam (shown in Table 4-5 on page 92 of the final Instream Flow Study report) are as follows:

* 205,083 acre feet in a normal year;
* 137,629 acre feet (67 percent of the normal year volume) in a dry year (1 in 10-year drought);
* 84,980 acre feet (41 percent of the normal year volume) in a drought year (1 in 100-year drought).

5.2.3 Assessment of Aquatic Biology

Assessment of Aquatic System Health in Connecticut

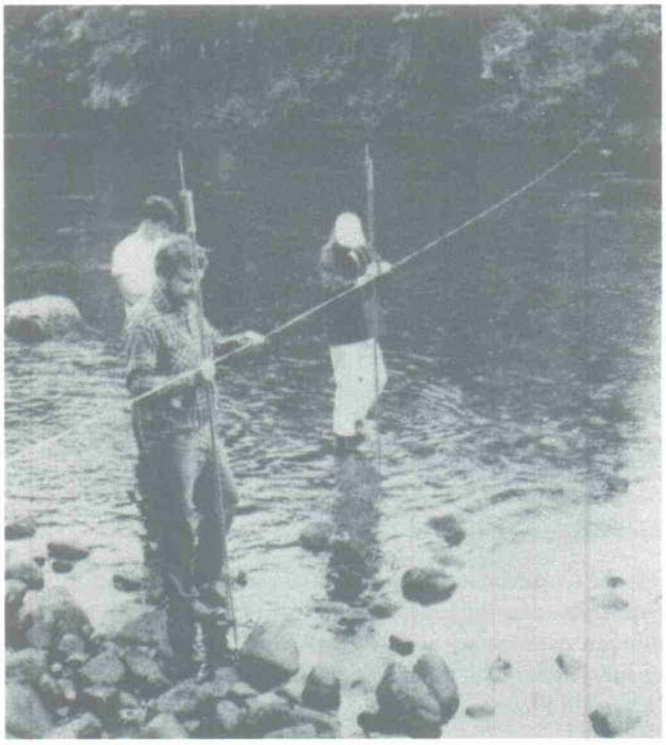
Methods

For the Connecticut portion of the river, the relationship between flow and the health of the aquatic system was evaluated through an assessment of how changing flows affect the amount of fish habitat available. Fish habitat was assessed using the "Instream Flow Incremental Methodology (IFIM)," the most advanced modeling technique for this type of study. This technique is based on the principle that fish populations are directly dependent upon several key habitat characteristics: water depth and velocity; substrate type; and availability of cover. The methodology requires taking field measurements of these characteristics at several sites at a range of flows, and then integrating those measurements into a computer model. The computer model then can be used to predict the availability of habitat for different fish species and life stages over a range of flows. In IFIM outputs, habitat is measured in terms of "Weighted Usable Area" (WUA), with one unit of WUA being equivalent to one square foot of optimal habitat for the species/life stage in question. The relative quality of habitat is determined based on known preferences of that species/life stage for each of the key habitat characteristics mentioned above.

The fisheries study was conducted for the entire West Branch and main stem in Connecticut—from the Goodwin Dam downstream to the confluence with Connecticut River. The Wild and Scenic Study Segment was further subdivided into three smaller segments based on where major tributaries enter (the Still River, East Branch, and Nepaug River). Within those three segments, field measurements were taken at a total of 17 specific transect sites which typified the full range of habitat types (rapids, riffles, runs, pools) available in the river. The data were collected across a full range of flows in the spring and summer of 1991 using standard IFIM methods.

The study examined the effects of different flows on the amount of habitat available for several lifestages of the following species: Atlantic salmon, brown trout, brook trout, American shad, smallmouth bass, and longnose dace. The habitat preferences used for each species/life stage were developed from a combination of existing scientific literature, the consultant's

[35] Gaging records were obtained from stations on the West Branch at Riverton, the Still River at Robertsville, and the main stem at Tariffville and the Rainbow Dam.



Extensive field research provided the foundation for the Instream Flow Study. Here, fisheries biologists measure stream characteristics along one of many transects used in the study.

professional judgement, and consultation with fisheries biologists from the Connecticut DEP. These preferences are documented visually in the "Suitability Index curves" which are presented in Appendix A of the final Instream Flow Study report.

Habitat modeling was performed using standard IFIM procedures, and included use of a model that the U.S. Fish and Wildlife Service's Instream Flow Group recommends for providing the most accurate results over a wide range of flows. The results of the modeling then were used to develop alternative fisheries flow scenarios incorporated later in the water allocation exercise.

Results and Analysis

The results of the IFIM modeling, presented on pages 37-54 of the final report as Weighted Usable Area curves, show the relationship between flows and habitat for the species and lifestages studied. These results provide the basis for developing alternative flow scenarios to protect fisheries resources. However, before that step could be taken, several significant issues had to be resolved. Decisions regarding those issues were important to both the development of alternative fisheries flow scenarios and the overall water allocation modeling exercise. They are described briefly below.

- Species selection: Adult brown trout and juvenile Atlantic salmon were selected to serve as surrogates for the fisheries community as a whole, for which adequate minimum flows should be maintained. They were selected for a variety of reasons, including:
  - (a) the significance of trout fishery management;
  - (b) the importance of the area to juvenile Atlantic salmon rearing;
  - (c) the higher flow requirements of the adult stage versus the fry and juvenile stages of brown trout;
  - (d) the higher flow requirements of the juvenile stage versus the fry stage of Atlantic salmon; and
  - (e) professional judgement that the projected optimum flows for adult Atlantic salmon and longnose dace did not reflect flow conditions necessary for their sustained health and vitality.
- The segment of the West Branch from the confluence with the Still River downstream to the confluence with the East Branch ("Segment 2") was identified as the most important segment in which optimum or near-optimum conditions for those target species/lifestages should be maintained.
- In recognition of the Still River's significant contribution to flows within Segment 2, the alternative flow scenarios were based on combined projected volumes from Goodwin Dam releases and Still River flows, rather than through sole reliance on reservoir releases. The seasonal and annual variability in Still River flows caused by rainfall was factored into the alternative flow scenarios by adjusting required reservoir releases in response to higher or lower inflow from the Still.

Based on the results of the IFIM analysis and the determinations described above, three alternative flow scenarios to maintain and protect fisheries resources were developed:

(1) Optimum habitat scenario: Optimum habitat was defined as the maximum Weighted Usable Area (WUA) for the target species/life stage. For adult trout in Segment 2, maximum WUA is achieved at a flow of 150 cfs. Although maximum WUA for juvenile Atlantic salmon in Segment 2 is achieved at 100 cfs, their maximum WUA in Segment 3 (the segment immediately downstream of Segment 2) is achieved at 150 cfs. A year-round minimum flow of 150 cfs was, therefore, established as the foundation for the optimum habitat scenario. However, in order to maintain sufficiently low water temperatures necessary for truly optimal conditions in the warmer summer months, DEP fisheries staff recommended that at least 130 cfs be provided by reservoir releases during those times, regardless of what inflow from the Still River might be. As a result, the optimum habitat scenario was modified to include a minimum of 130 cfs contributed by Goodwin Dam releases in June, July, and August. The scenario is therefore referred to as the "150/130 cfs minimum flow scenario."

(2) Near-optimum habitat scenario: Near-optimum habitat was defined as within 5 percent of maximum WUA. For adult trout in Segment 2, this level is provided by a flow of 95 cfs. The near-optimum habitat scenario therefore

maintains 95 cfs year-round in Segment 2, with a minimum reservoir release of 95 cfs in June, July, and August. This is referred to as the "95 cfs minimum flow scenario."

(3) Intermediate scenario: This is a hybrid of the other two scenarios, and maintains habitat levels that are within 5 percent of those provided by either the historical flow regime or the 150/130 cfs scenario. It compensates for certain monthly deficiencies in the 95 cfs scenario in which habitat levels are significantly below either historical habitat levels or those provided by the 150/130 cfs scenario.

The monthly dam releases needed to maintain these three scenarios, as well as historic flow conditions, are presented in Table 3-3 on page 58 of the final Instream Flow Study report.

Next, the total WUA provided by each scenario was calculated for the entire coldwater fishery section (from the Goodwin Dam downstream to the confluence with the Pequabuck River). These levels of overall WUA were then compared with the habitat levels provided by the historical flow regime to determine how the alternative flow regimes would affect existing conditions and resources. The data for that comparison are presented in Table 3-4 on page 61 of the final report.

Assessment of Aquatic System Health in Massachusetts

Methods

The health of the aquatic system in the Massachusetts Study Segment was evaluated through analyses of aquatic invertebrate communities and other habitat characteristics. The following procedures were used:

- Samples and observations for these indicators were taken at six sites spread throughout the study segment.
- Benthic communities were sampled qualitatively using the U.S. Environmental Protection Agency's "Rapid Bioassessment Protocol II" (EPA, 1989). This is an accepted methodology designed to determine whether the biological integrity at a site is impaired by water quality or habitat conditions. The technique focuses on several different species of bottom-dwelling organisms, some of which may be highly intolerant of degraded conditions and others that may thrive in those circumstances.
- General habitat quality was evaluated using accepted EPA procedures which focus on physical and water quality characteristics (such as substrate, cover, channel morphology, bank structure, temperature, dissolved oxygen, etc.) near each sampling station.

Results and Analysis

The assessment at all six sites revealed conditions typical of unpolluted, coldwater environments in southern New England. The samples of benthic organisms were dominated by species which do not survive well in polluted environments, and there was no evidence of significant organic or toxic pollution. The water quality parameters that were sampled indicated very good to excellent conditions throughout the study area.

5.2.4 Assessment of Recreation and Scenic Values

Methods

This portion of the Instream Flow Study evaluated the effects of different flow levels on the primary recreational uses and scenic values of both the Massachusetts and Connecticut Wild and Scenic Study Segments. The assessment included analyses for the following recreational uses: fishing (both wading and bank fishing); tubing; downriver canoeing (i.e., direct point-to-point travel); and play boating (i.e., using river currents and features such as eddies and hydraulics to perform various maneuvers, particularly in kayaks). For each of those activities, as well as for scenic enjoyment, the evaluation identified both the minimum flow needed for an acceptable experience and the optimum range of flows that provides the highest quality experience.

Data for the assessment were collected through three major efforts:

(1) More than 3,000 boaters, tubers, and anglers were surveyed on weekends during the spring, summer, and fall of 1991. The surveys were conducted over the full range of normal flows (approximately 10-250 cfs in Massachusetts, and 100-1000 cfs in Connecticut). Respondents were asked whether the flow on that day was about right for their particular activity, or, if not, whether they would have preferred higher or lower flows.

(2) An intensive three-day field evaluation was conducted by a team of experts and local volunteers in September, 1991. During that period, dam releases were controlled so that team members could participate in each recreational activity over a full range of flows in close succession.

(3) For the scenic assessment, video footage was taken of several strategic sites at each of the different flows that were provided during the three-day field evaluation. Later in the fall and winter, three impartial audiences were asked to view a series of side-by-side videotape images of each location at different flows, and to indicate which flows they considered to be the most scenic.

Preliminary conclusions on the minimum and optimum flow levels for the primary recreation uses were developed by integrating the results from the surveys and the field evaluation. Those findings were presented to representatives of the Farmington's major user groups, and were revised based on their input. Other local experts were also contacted for their opinions on critical issues such as how different flows affect safety considerations.

Results and Analysis

The basic results of the recreation and aesthetics assessment are presented in **Figure 5-4** below.

The next phase of the recreation analysis involved using the minimum and optimum ranges identified to determine how much "recreational opportunity" actually existed historically during normal, dry and drought years. Recreational opportunity was defined as the number of days of both minimum and optimum conditions that existed in a given year for each major recreational use. The historical period of record used for this purpose was 1961-1990, the period since the Goodwin Dam was completed and substantial flow regulation went into effect for the West Branch. Once the historical levels of recreational opportunity were determined, it would be possible to calculate the annual volumes required to provide those levels by multiplying the number of days of minimum and optimum conditions by the daily volume needed for a minimum or optimum experience.

FIGURE 5-4
Summary of Minimum and Optimum Recreation and Aesthetics Flows

Massachusetts Study Area

	Minimum	Optimum
Fishing [a]	25 cfs	75 - 250 cfs
Scenic Enjoyment	n/a	170 cfs
Tubing	unsuitable	unsuitable
Downriver Canoeing	250 cfs	250 cfs + 4" [b]
Play Boating	250 cfs	250 cfs + 4"-2' [b]

Connecticut Study Area

	Minimum	Optimum
Fishing	100 cfs	150 - 350 cfs
Scenic Enjoyment	n/a	240 - 540 cfs
Tubing	200 cfs	350 - 450 cfs [c]
Downriver Canoeing	250 cfs	360 - 980 cfs
Play Boating	250 cfs	540 - 980 cfs

[a] While these minimum flows will enhance the physical conditions for fishing techniques, the very low natural stream flows in Massachusetts (often less than 10 cfs) limit fish production, available fish habitat, and pools where fish might be found. Thus, while the recommended flow levels may enhance the conditions for fishing, anglers are unlikely to find many fish except during periods immediately following state fish stocking releases.

[b] Because flows above 256 cfs were not observed, we can only estimate how much water would have to be added to achieve optimum conditions. For downriver canoeing, we estimate 4 inches of water would have to be added to the level in the river stretch above New Boston, and, for play boating, 4 inches to 2 feet would need to be added.

[c] Lifeguards with proper equipment are needed at Satan's Kingdom, particularly at flows above 350 cfs. Optimum flows for tubing at Satan's Kingdom start lower (@ 275 cfs). However, optimum flows on the upper portion of the river (Goodwin Dam to Pleasant Valley) start at 350 cfs.

However, before determining the historical levels of recreational opportunity and the annual volumes needed to maintain them, several related issues had to be resolved. A working group, established by the Farmington River Study Committee's Water Resources Subcommittee, discussed and resolved those issues.[36] Following is a summary of the working group's conclusions:

- **Recreation Seasons**: To determine how many days of minimum and optimum conditions existed historically for each major recreational activity, it was first necessary to identify reasonable "recreation seasons" for each activity that encompass the periods of heaviest use. Those seasons were defined as follows:

Fishing:	March 1 - October 31
Tubing:	Weekends only from Memorial Day - July 4th
	Daily from July 4th - Labor Day
	Weekends only for two weeks after Labor Day
Downriver Canoeing and Play Boating:	April 1 - September 30
Scenic Enjoyment:	Daily for the entire calendar year

- **Representative Rainfall Years**: Because historical recreational opportunity was to be evaluated based on actual conditions since the Goodwin Dam was completed, it was necessary to identify the most representative normal, dry and drought years from that period. After considerable analysis, the following years were identified:

Most Representative Normal Year:	1974
Most Representative Dry Year:	1988
Most Representative Drought Year:	1965

While these years are not perfect reflections of a statistically "normal," "dry," or "drought" year (and, in all probability, no actual year ever would be), they are the best available from the period of record and are reasonable to use.

- **Selecting Specific Flows To Include in the Analysis**: To calculate the annual volumes required to maintain historical levels of recreational activity, it was necessary to select specific flows from the minimum and optimum ranges for each activity. The group ultimately recommended using the flow from the low end of both the minimum and optimum ranges for each recreational activity. The rationale for this decision is discussed fully in Appendix G of the final Instream Flow Study report.

By comparing the minimum and optimum ranges for each activity with the actual flow records from the representative years, it was possible to determine the numbers of minimum and optimum days that were actually available under historical normal, dry and drought conditions. This information is presented in **Figure 5-5**.

The numbers of days with minimum and optimum conditions were then multiplied by the daily volumes (over a 24-hour period) required to maintain the low end flows from each minimum and optimum range. The products are the annual volumes required to provide the historical recreational opportunity for each activity under different rainfall conditions. As was done for fisheries, recreational flows were calculated for the segment downstream of the confluence with the Still River. Therefore, the annual volumes contributed by the Still River were subtracted from the overall annual volumes required for recreation, producing net annual volumes of reservoir releases required for each recreational use. The results of these calculations are presented in Table 3-6 on page 64 of the final Instream Flow Study report.

5.2.5 Integration

Methods

Once the initial assessments of hydrology, aquatic biology, and recreation/scenic values were completed, the next task was to integrate the information from those assessments into a series of comprehensive water allocation scenarios. This process involved three major steps:

The Instream Flow Study identified minimum and optimum flow ranges for a variety of recreational activities, including kayaking or "play boating."

[36] The working group, which consisted of staff members from the DEP, NPS, MDC, and FRWA, prepared a detailed memorandum explaining how they reached their conclusions. This memo is contained in Appendix G of the final Instream Flow Study report.

FIGURE 5-5
Historical Number of Days of Minimum and Optimum Recreational and Scenic Opportunities Available under Different Rainfall Conditions

		Drought 1965	Dry 1988	Normal 1974
Fishing (March 1 - October 31)	Minimum	31	22	20
	Optimum	51	171	101
Tubing (Memorial Day - September 15)	Minimum	0	60	9
	Optimum	0	12	43
Scenic Enjoyment (entire year)	Minimum	n/a	n/a	n/a
	Optimum	79	257	243
Play Boating (April 1 - September 30)	Minimum	26	135	111
	Optimum	8	2	18
Downriver Canoeing (April 1 - September 30)	Minimum	19	98	37
	Optimum	15	39	92

(1) The total annual volumes of water available from the West Branch Reservoirs under normal, dry and drought conditions were calculated based on the results of the hydrologic modeling;

(2) The total annual volumes of reservoir releases required to meet the different resource and use demands under varying rainfall conditions were calculated;[37]

(3) Those total release requirements were subtracted from the total volumes available to determine if adequate water exists to meet all of the demands in normal, dry and drought years.

The exercise was designed to determine the potential for compatible future water supply withdrawals. This was accomplished by conserving reservoir volumes whenever possible, while still meeting basic resource and use requirements. The approach sought to accommodate all resources and uses, and to determine whether any surplus water would be available.

[37] Although a full study of the relationship between different flows and scenic values was conducted, an annual volume of water to provide for scenic values was not estimated or incorporated into the final water allocation calculations. These steps were omitted because the aesthetics evaluation concluded that there is no minimum flow level to maintain scenic conditions.

Assumptions

In developing the water allocation scenarios, it was necessary to make assumptions about a number of additional factors that are of critical importance to water allocation in the Farmington River basin. Those assumptions provide much of the foundation for the results of the entire exercise. Consequently, if any of the assumptions were changed, the results likely would change in response. The principal assumptions are presented below; their implications for river management are addressed in **Subsection 5.2.6: Discussion.**

- Existing Legal Commitments:
  - 50 cfs minimum flow - This statutory requirement was considered the bottom line for reservoir releases.
  - Basic riparian agreement with the Farmington River Power Company - The riparian agreement requires the MDC to provide releases totalling 21.7 billion gallons per year; however, the schedule for specific releases varies year-to-year based on the request of the Farmington River Power Company within certain seasonal constraints. In order to perform the water allocation modeling, the consultant developed a hypothetical scenario to provide the required releases. The scenario consisted of releases of 300 cfs for 90 consecutive days during the months of July, August, and September, plus an additional 300 cfs for 22 days

during midwinter. This scenario was included in the calculations for normal and dry years only. To conserve reservoir volumes in drought conditions, it was assumed that the full riparian commitment would be bought out in those years by the MDC. (Such financial compensation is allowed under the existing agreement.)

* Additional riparian commitments - The calculations did not include the current requirement to release all natural inflow to the West Branch Reservoirs between 50 - 150 cfs and any releases from Otis Reservoir (as required under both the riparian agreement with Farmington River Power Company and another agreement with the Allied Connecticut Towns). That is, the study assumed that all flows above 50 cfs plus Otis Reservoir releases could be stored for future allocation except when necessary to meet the basic riparian demand and/or instream resource requirements.

- **Reservoir Storage Capacity:** It was assumed that the West Branch Reservoirs are large enough to capture and store all of the runoff flowing into them during normal, dry, and drought years; that is, the calculations reflect the assumption that all water predicted to be available over the course of a given year could be stored and distributed as needed to meet the various instream requirements, and that no water would be lost from the reservoirs as a result of spillage or flood control management, even during seasonal high flows.

- **Water Supply Withdrawals:** The MDC was requested to submit two levels of potential water supply withdrawal from the West Branch for inclusion in the water allocation calculations. Those levels were set at constant rates of 10 and 20 million gallons per day (or 11,202 acre-feet per year and 22,404 acre-feet per year, respectively).

- **Fisheries Enhancement Pools:** In designing its reservoir management program for the Colebrook Reservoir, the Army Corps of Engineers set aside 5000 acre-feet to enhance anadromous brown trout runs, and an additional 5000 acre-feet to enhance American shad runs. The anadromous trout pool is drawn upon frequently; however, water has generally not been provided for shad because that allotment is derived from a small portion of the reservoir's flood control zone. As a result, the water allocation calculations included the brown trout enhancement pool as an annual release requirement under all rainfall conditions, but did not include releases for shad.

- **Flushing Flows/High Flow Considerations:** There was considerable discussion about what releases, if any, should be provided as "flushing flows," which are generally considered necessary to prevent the unhealthy accumulation of fine grained sediments in the streambed. Lacking an intensive, site-specific study of this issue, a desktop method was chosen to provide an initial approximation — the 3-day average maximum flow for the period from 1970-1990. This volume was calculated by first averaging the flows from the continuous 3-day period with the highest flows during each year from 1970-1990, and then averaging those 20 yearly 3-day maximums. An assumption was made that extreme high flows are not necessary every year. The analysis therefore incorporated this volume in the water allocation scenarios for normal years, but not for dry or drought years. (See Appendix G of the final Instream Flow Study report for additional discussion of this issue.)

- **Water Quality:** Based on the results of the DEP's waste load allocation studies for the Farmington, the minimum flow of 50 cfs mandated by state statute was assumed to be adequate to meet the standards for Class B water quality classification.

- **Use of Combined Flows from the Goodwin Dam and the Still River:** As described previously, calculations of the flow needs for both fisheries and recreation did not rely exclusively on releases from the West Branch Reservoirs, but also included the annual volumes contributed by the Still River under different rainfall conditions.

- **Contribution of Riparian Releases Toward Fisheries and Recreational Release Requirements:** The flows provided to meet the hypothetical schedule of releases for the riparian agreement were assumed to contribute to the flows needed for both fisheries and recreation. (This approach is consistent with the historical reality on the Farmington, where much of the flows that have helped sustain fisheries and provide conditions suitable for recreation—especially in the summer—have been a direct result of riparian releases.)

- **Contribution of Fisheries Flows Toward Recreational Release Requirements:** The base flows provided under the alternative fisheries flow scenarios also were assumed to contribute to the flows needed for recreation.

- **Distribution of Minimum and Optimum Days Within the Recreation Seasons:** To complete the final calculations of the annual reservoir volumes required to provide historical levels of recreational opportunity, it was necessary for the consultant to distribute the days of minimum and optimum conditions for each use within the recreation season for that use. This was done by scheduling high flow recreation days at times when the greatest flow volume would be provided from Still River inflow, and riparian releases or fisheries base flows. For instance, all 18 days of optimum conditions for play boating (flows of 540 cfs or higher) in a "normal" year would be provided in April, when Still River inflow is at its peak (estimated at 415 cfs).

Final Results and Analysis

The final results of the water allocation exercise are shown in **Figure 5-6.** The table shows a series of water allocation scenarios based on the varying amounts of water available in the watershed above the Goodwin Dam during normal ("50% exceedence"), dry ("90% exceedence"), and drought ("99% exceedence") conditions. The allocation scenarios include columns depicting the annual volumes required for each of the following:

* the three different flow scenarios for fisheries;
* historical numbers of minimum and optimum days that existed during normal, dry and drought conditions for the different recreational uses;
* two rates of withdrawal for water supply;
* the fisheries enhancement pool;
* the riparian agreement with the Farmington River Power Company; and
* flushing flows (during normal rainfall years only).

In the calculations, the annual volumes for fisheries, recreation, water supply, the fisheries enhancement pool, and the riparian agreement were subtracted from the total watershed yields. The initial results are shown in the "surplus/(deficit) 1" column. The annual volume estimated for flushing flows was then subtracted for normal years only, producing the final results shown in the "surplus/(deficit) 2" column.

FIGURE 5-6
Selected Water Allocation Scenarios for Diverse Uses of the Farmington River

(All quantities are in acre-feet.)

Water Year (% exceedence)	Total Watershed Yield	Fishery Flow	Recreation Flow	Water Supply [d]	Fishery Enhancement Pool	Riparian Rights	Surplus (Deficit) 1	Flushing Flow	Surplus (Deficit) 2
50%	205,083	30,167 [a]	3,431	0	5,000	66,599	99,886	6,425	93,461
"	"	27,945 [b]	"	0	"	"	102,108	"	95,683
"	"	27,945 [c]	"	0	"	"	102,108	"	95,683
"	"	30,167 [a]	"	11,202	"	"	88,684	"	82,259
"	"	27,945 [b]	"	11,202	"	"	90,906	"	84,481
"	"	27,945 [c]	"	11,202	"	"	90,906	"	84,481
"	"	30,167 [a]	"	22,404	"	"	77,482	"	71,057
"	"	27,945 [b]	"	22,404	"	"	79,704	"	73,279
"	"	27,945 [c]	"	22,404	"	"	79,704	"	73,279
90%	137,629	32,381 [a]	2,105	0	"	"	31,544	0	31,544
"	"	27,945 [b]	"	0	"	"	35,980	0	35,980
"	"	28,004 [c]	"	0	"	"	35,921	0	35,921
"	"	32,381 [a]	"	11,202	"	"	20,342	0	20,342
"	"	27,945 [b]	"	11,202	"	"	24,778	0	24,778
"	"	28,004 [c]	"	11,202	"	"	24,719	0	24,719
"	"	32,381 [a]	"	22,404	"	"	9,140	0	9,140
"	"	27,945 [b]	"	22,404	"	"	13,576	0	13,576
"	"	28,004 [c]	"	22,404	"	"	13,517	0	13,517
99%	84,980	61,391 [a]	9,074	0	"	"	9,515	0	9,515
"	"	44,433 [b]	9,337	0	"	"	26,210	0	26,210
"	"	45,504 [c]	9,337	0	"	"	25,139	0	25,139
"	"	61,391 [a]	9,074	11,202	"	"	(-1,687)	0	(-1,687)
"	"	44,433 [b]	9,337	11,202	"	"	15,008	0	15,008
"	"	45,504 [c]	9,337	11,202	"	"	13,937	0	13,937
"	"	61,391 [a]	9,074	22,404	"	"	(-12,889)	0	(-12,889)
"	"	44,433 [b]	9,337	22,404	"	"	3,806	0	3,806
"	"	45,504 [c]	9,337	22,404	"	"	2,735	0	2,735

[a] Volume for 150/130 cfs flow scenario.
[b] Volume for 95/95 cfs scenario.
[c] Volume for intermediate flow scenario.
[d] For water supply withdrawals, a continuous withdrawal of 10 million gallons per day (mgd) = 11,202 Acre-feet per year; 20 mgd = 22,404 Acre-feet per year.

Keeping in mind the many assumptions upon which the allocation alternatives rest, the results indicate that during dry, normal and wetter-than-normal years there appears to be sufficient flow to support all resources and uses, although the surplus remaining under certain scenarios is small. Under drought conditions, the MDC has the right to reduce or suspend riparian releases and financially compensate the riparian owner accordingly. However, even with riparian releases eliminated under drought conditions, there is insufficient water available to provide collectively for the "optimum habitat" fisheries scenario, the fisheries enhancement pool, historical levels of recreation, and water supply withdrawals of either 10 mgd or 20 mgd. There does appear to be sufficient water in a drought to provide for a 10 mgd or 20 mgd withdrawal in conjunction with either the near-optimum or intermediate fisheries scenario, although the surpluses with a 20 mgd withdrawal are quite small.

It should be noted that near-optimum fisheries flows are substantially higher than historical flows in the 1965 drought. Furthermore, the consultant determined that it is probably unrealistic and unnecessary to maintain higher flows than those in the near-optimum scenario in a drought to protect the long-term integrity of fisheries resources. Finally, it must be recognized that during a declared water supply emergency, Connecticut General Statute 22a-378 gives the Commissioner of the Department of Environmental Protection the authority to divert water as needed to ease the emergency conditions. Such diversions could result in reduced or curtailed releases for instream resources.

5.2.6 Discussion

Study Limitations

Throughout this summary of the Instream Flow Study, a number of significant assumptions have been identified. These assumptions have inherent limitations, which should be considered in future management decisions. The major limitations include the following:

- **Existing Legal Commitments:**
  - * Riparian releases to the Farmington River Power Company - The Goodwin Dam releases required under the riparian agreement with the Farmington River Power Company historically have provided a substantial contribution to base flows in the West Branch, thereby providing much if not all of the water for fisheries and recreation. This is particularly true during the drier summer months, when the riparian releases have often produced river flows considerably higher than what might otherwise be available.

    In the Instream Flow Study, the hypothetical scenario used to satisfy the riparian commitment represents a near worst-case approach in terms of the reservoir volume required. This conservative approach is reasonable given the variability of releases which the riparian owner is allowed to request. Historically, however, the Farmington River Power Company has generally requested riparian releases at lesser rates over a longer period of time than those in the hypothetical scenario. Using a less conservative scenario that more closely reflected historical riparian releases could affect the demand on reservoir volumes required to maintain fisheries and recreation. Stretching the riparian base flow contribution over a longer period could help to reduce the annual reservoir demand needed to provide the relatively low instantaneous flows required for fisheries. Conversely, however, decreasing daily riparian releases during the summer recreation season could necessitate supplemental releases to provide the relatively high flows required for some recreational activities. This could result in an additional demand on reservoir volumes.

  - * Additional riparian commitments - One of the most significant limitations of the study is the fact that it does not incorporate the current requirement to release all natural inflow to the West Branch Reservoirs between 50-150 cfs plus all Otis Reservoir releases, as mandated under the other existing riparian commitments. The principal implication is that if any of the flow scenarios developed in the study are actually pursued, those commitments would have to be renegotiated. (Note: If the riparian commitments were changed to allow storage of inflow above 50 cfs, adequate releases would still be required to meet downstream management objectives, including satisfying the basic riparian agreement with the Farmington River Power Company and maintaining fisheries and recreational opportunities.)

- **Reservoir Storage Capacity:** The results of the study hinge in part on the assumption that the West Branch Reservoirs have adequate capacity to store all the water predicted to be available in any given year (i.e., that no water will be lost to spillage/overflows and thus be unavailable for later distribution). The study concluded that this is probably accurate for most dry and drought years, but it is not clear that the reservoirs can entirely capture and regulate flows during normal rainfall years. Therefore, the actual annual water surpluses for normal years may be somewhat lower than those calculated in the final water allocation table. It should be noted, however, that under these conditions all surplus water will be released. These releases would enhance instream flows.

  Based on the historical management constraints for the reservoirs (including the requirements of the existing riparian commitments), these conclusions seem reasonable. However, it is possible that changing the riparian commitments to allow storage of inflow above 50 cfs plus Otis Reservoir releases (as described under the previous issue) could exceed the reservoirs' storage capacity under other rainfall conditions as well.

- **Flood Control Management of Colebrook Reservoir:** An additional issue tied to reservoir storage capacity is the Army Corps of Engineers' management requirements for flood control in Colebrook Reservoir. Those requirements were not considered in the development of the water allocation scenarios. The Corps would have to approve any management plan which could infringe on their flood control zone (for instance, by allowing storage of inflow between 50-150 cfs plus Otis Reservoir releases).

- **Water Supply Withdrawals:** The withdrawal levels of 10 mgd and 20 mgd are hypothetical rates, used for informational purposes to establish the range of demands that the upper Farmington River watershed can support. As is the norm in water supply planning, the hypothetical withdrawals were established as constant rates (i.e., 10 and 20 million gallons per day over the entire year). However, it is more informative to think of these withdrawals in terms of the annual reservoir volumes they would require (i.e., 11,202 and 22,404 acre feet per year, respectively, as shown in **Figure 5-6**). The withdrawals would likely be made from water collected in the reservoirs during non-recreation season high water periods and storm events.

  If a withdrawal is pursued, it could be for a lesser or greater amount than those hypothetical rates. Regardless, any specific proposal would need to be evaluated to determine its compatibility with the protection of instream resources.

- **Flushing Flows:** The volume incorporated for flushing flows was only an initial approximation of the river's needs. The precise needs of any given river are difficult to determine. A site-specific empirical study would need to be conducted to determine accurately the Farmington River's flushing flow needs.

- **Reliance on Still River Flows:** It is reasonable to focus on the segment below the confluence with the Still River for maintaining fisheries and recreation, and therefore to rely on the combined flow contributions of both the Still and releases from the Goodwin Dam. However, the Still River contributions in the Instream Flow Study are based on monthly and annual estimates. Actual daily Still River flows are likely to be highly variable. Such daily variation from the monthly and annual projections will require alterations in dam releases in response to the actual contribution from the Still.

- **Seasonal Distribution of Recreational Opportunity:** The distribution of days of minimum and optimum recreational conditions within the recreation seasons outlined in the flow management scenario is similar to the seasonal patterns of the representative years. However, this similarity is coincidental rather than intentional. The consultant scheduled days of minimum and optimum recreational conditions to take greatest advantage of flows that would already be in the river for other reasons. For instance, the study targets days of highest recreation flows (i.e., for optimum boating conditions) in April to take advantage of high Still River flows, and targets most days of moderate recreation flows (i.e., for minimum and optimum tubing and minimum boating conditions) in midsummer, the period when most riparian releases are scheduled.[38] The relatively low flows needed for minimum and optimum fishing conditions are distributed throughout all periods of the recreation season. Certain discrepancies from the historical patterns do exist, largely as a result of how riparian releases are distributed (e.g., diminished boating opportunities in June). To replicate the historical recreational opportunity that existed during those years, the schedule for the minimum and optimum days for each activity may need to be adjusted. Such a schedule may require different annual volumes of releases for recreation than those included in the final water allocation calculations, with potential impacts on the amount of water available for other purposes.

  In dry and drought years, the flow management scenario in the Instream Flow Study would provide higher average releases over the recreation season than existed during the representative years. As a result, the total days of recreational opportunity would exceed what existed historically, as shown in **Figure 5-7**. For example, in the representative drought year (1965) there were 51 days of optimum conditions and 31 days of minimum conditions for fishing. Under the flow regime identified in the Instream Flow Study, a total of 114 optimum days and 123 minimum days would be available for fishing.

  In normal rainfall years, the Instream Flow Study also would provide more days of recreational opportunity than the representative year (1974), although the flows identified would be lower than historical conditions. This would be achieved by more intensely managing Goodwin Dam releases to match Still River flows. That is, high Still River flows would be matched by lower Goodwin Dam releases, and vice versa. In this way, West Branch flows would be neither so high nor so low that only limited recreational opportunities would be present.

- **Flows Needed For Minimum and Optimum Recreational Conditions:** Using only the flows from the low end of the minimum and optimum ranges for the various recreational activities does not accurately reflect the actual distribution of flows within the minimum and optimum ranges that was provided during the representative years. Historically, flows spanned the ranges of minimum and optimum recreation conditions. Using the historical flows in calculating the annual reservoir volumes required to support recreation could produce greater total volumes than those produced by using the low end values. This is demonstrated in Table B of Appendix G in the final Instream Flow Study report. However, it should be

[38] In both normal and dry years, the distribution of riparian releases incorporated in the flow management scenario is a significant factor in providing the number of days of recreational opportunity.

FIGURE 5-7
Comparison of the Numbers of Days of Historical Recreational Opportunity to Those That Would Be Provided by the Flows Identified in the Instream Flow Study

		Drought Year 1965		Dry Year 1988		Normal Year 1974	
		Historic	IFS *	Historic	IFS *	Historic	IFS *
Fishing	Minimum	31	62	22	0	20	0
	Optimum	51	114	171	212	101	184
Tubing	Minimum	0	0	60	72	9	13
	Optimum	0	3	12	9	43	68
Play Boating	Minimum	26	26	135	137	111	165
	Optimum	8	8	2	2	18	18
Downriver Canoeing	Minimum	19	19	98	100	37	91
	Optimum	15	15	39	39	92	92

* "IFS" = Days of recreation using flows as identified in the instream flow study.

recognized that providing a flow at the low end of the optimum range for some uses will provide conditions well into (or even beyond) the optimum range for other uses. This concept was incorporated into the study. For instance, flows at the low and high ends of the optimum range for tubing were used to fulfill the number of optimum days for that activity while simultaneously meeting some of the flow levels required for lower and higher water demand activities (i.e., fishing and boating, respectively). In addition, the consultant identified a range of flows which provide optimum conditions for each recreational activity, and did not specify that flows at the low or high end were any more desirable.

Opportunities do exist to provide a distribution of flows within the minimum and optimum ranges without placing a substantial additional demand on reservoir volumes. They include:

* Utilizing surplus water that is available after all resource needs and uses identified in the instream flow have been met. This method is particularly viable for normal rainfall years, in which a large volume of surplus water has been identified.
* Linking higher recreational flow needs (e.g., for boating) to naturally occurring high flows in the Still River.

These opportunities should be incorporated into any future flow management plan for the West Branch.

- **Use of Representative Years in the Recreational Analysis:** In determining the levels of recreational opportunity present historically, actual flow data from the most representative normal, dry and drought years were used to calculate the number of days of minimum and optimum recreational conditions. Actual flows were used because there is no way to generate daily flow projections for normal, dry and drought conditions statistically. It should be noted, however, that no actual year will precisely mimic the flow pattern for a statistically generated normal, dry or drought year. Furthermore, the Connecticut Study Segment was found eligible for Wild and Scenic River designation based on actual historical levels of recreational opportunity, not a statistically generated level of recreational opportunity.

The Broader Context

The Instream Flow Study is an unusual example of cooperation among many diverse interests to generate new, objective information on a highly controversial subject. The study would not have been successful without the substantial commitment made by all participants to work cooperatively.

The study provided critical new information both on the flows needed to protect the Farmington River's fisheries, recreation, and scenic values, and on the potential for compatibility between future withdrawals and the protection of those instream resources. That information was essential for the subsequent

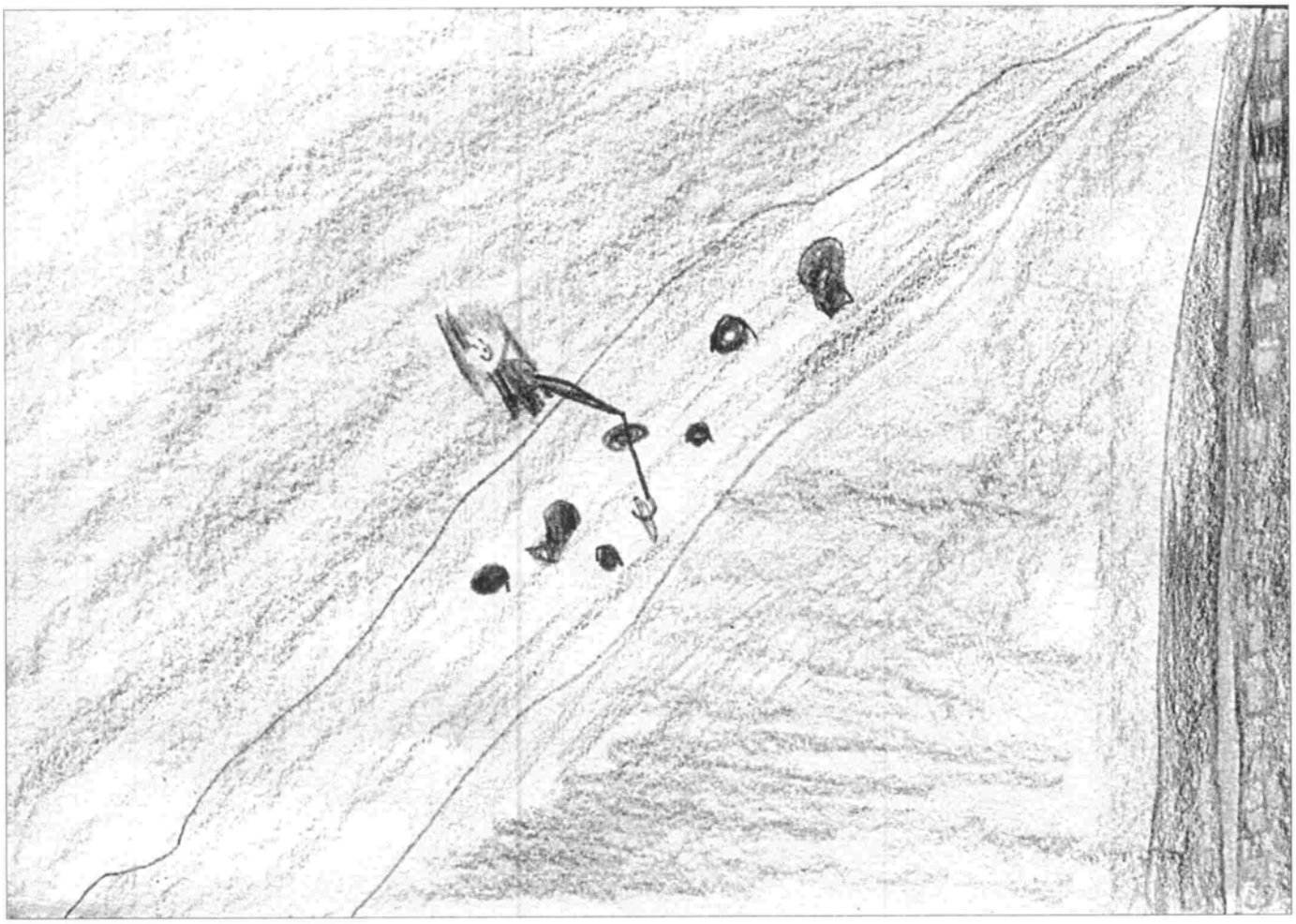
development of the Upper Farmington River Management Plan, and will be a valuable tool for resolving important issues in the future.

The study also established an important precedent that can serve as a model for other Wild and Scenic River Studies with similar issues regarding instream flows and water allocation. This is the first time an analysis of this type has been used as a tool for decision-making during a Wild and Scenic River Study, prior to a decision on federal designation. It provided all interested parties with an indication of whether some level of withdrawal theoretically could be possible in conjunction with the strong protection for instream resources required under Wild and Scenic River designation. With designation now in place, the Instream Flow Study will be useful in evaluating whether proposed projects would adversely affect the river and, therefore, whether any necessary federal permits should be issued.

The reader should keep in mind that the Instream Flow Study is not an evaluation of a specific withdrawal proposal, nor does it define a specific management regime for the West Branch Reservoirs. Rather, it incorporates two hypothetical levels of withdrawal into an intricate resource management and water allocation exercise. As with any scientific analysis, the study is based on a number of important assumptions; these assumptions have related limitations that should be considered in any future management decisions.

If a withdrawal is proposed in the future, the applicant would have to satisfy requirements for applicable state and federal permits and resolve other potential constraints. An essential element for permitting would be the development of a plan for reservoir management, including an operational plan and a detailed flow regime. The plan would identify how the reservoirs and releases would be managed to balance competing uses and protect the river's resources as identified in the Instream Flow Study. Other constraints could include, for example, the need to renegotiate existing flow management agreements.

The Instream Flow Study provided critical new information on the flows needed to protect the Farmington River's fisheries, recreation, and scenic values, and on the potential for compatibility between future withdrawals and the protection of those instream resources.



Chapter 6: Support for River Designation and Protection

One day at the Farmington River my dad found an Indian pipe. A few days ago my dad read in the newspaper about other people who had found Indian artifacts. Some of them are on display at our Town Hall. To keep the beauty, popularity, and habitats for animals, I would like to see the Farmington River kept the same. I would like the animals to stay, they are fun and pretty to watch.

Linda McCue

This chapter describes the extent of support demonstrated during the study for Wild and Scenic River designation of each of the Farmington River segments. The description includes separate Subsections on each of the major parties with a stake in the future of the Farmington: the local communities; state government; state and federal legislators; regional authorities (i.e., the Hartford Metropolitan District Commission); and private organizations (such as the Farmington River Watershed Association). The chapter documents any formal/public positions regarding Wild and Scenic River designation taken by each of those interests, as well as other demonstrations of support or opposition. The reader should note that the results of the Farmington River Study Committee's formal vote on designation are presented in ***Chapter 9: Conclusion.***

For rivers such as the Farmington that are surrounded by private lands and/or non-federal public lands and for which federal land acquisition and land management are not envisioned as part of the long-term management scenario, broad-based support for river protection and designation is essential for several reasons. First, in these situations, landowners, local governments, state agencies, private organizations, and other river interests all must play important roles if the river is to be effectively protected and managed over time. Clear demonstrations of support for river protection and for Wild and Scenic designation provide evidence that those interests acknowledge their important roles.

Second, it would be inappropriate and largely ineffective for the federal government to provide the permanent protection from adverse federally assisted water resource projects offered through Wild and Scenic River designation without assurances from the other river interests that they are committed to doing their part to protect the river through their own authorities and abilities. A demonstration of commitment on the part of local governments, state agencies, and other interests to ensure compatible management of the lands along the river is particularly important, since the grassroots approach to the study/designation process precludes any major federal role in managing the corridor. In this context, Wild and Scenic River designation essentially amounts to an agreement between the federal government and those interests: the federal government agrees to protect the river from major adverse instream/water-related projects, provided that the other parties demonstrate their commitment to adequately protect the adjacent lands.

The final reason for requiring an expression of support for designation during the study period on private land rivers is to ensure that designation is, in fact, desired by the local communities and other interests. As described in ***Chapter 1: Introduction and Background,*** *the National Park Service and the Farmington River Study Committee made clear from the outset of the project that they would only recommend designation for each of the study segments if there was a strong indication of support. Maintaining that commitment was essential for establishing and preserving credibility with the local communities and other study participants.*

As explained in ***Subsection 1.1.2: Requirements for Designation,*** *an evaluation of the strength of support for river protection and designation is the second component in determining the suitability of a private land river for Wild and Scenic designation. The information presented in this chapter provides the foundation for that evaluation, which is included in* ***Chapter 8: Suitability.***

6.1 Massachusetts Study Segment

6.1.1 Local Communities

Indications of local attitudes regarding river protection and designation in the Massachusetts study towns were obtained through several mechanisms. The most important of these were official town meeting votes held in each of the communities directly abutting the study segment. Other indications included local actions taken during the study to strengthen protection of the river, and the results of a landowner/resident questionnaire that was distributed to all postal customers in the study area in the late winter/early spring of 1991.

Town Meeting Votes

All three communities bordering the Massachusetts segment — Otis, Sandisfield, and Tolland — initially voted in favor of pursuing Wild and Scenic River designation by overwhelming margins at town meetings in the spring of 1991.[39] However, in the late fall of that year, a group of local residents calling itself the "Friends of the Rivers" (F.O.R.) formed and began a campaign to prevent designation. The group quickly established liaisons with opponents of other river designations and conservation initiatives elsewhere in the country, and

[39] Although the Town of Becket was an official member of the Farmington River Study Committee, the community was not asked to hold a formal town meeting vote on designation because the study segment begins downstream of the Becket/Otis town line.

affiliated itself with national representatives of the self-proclaimed "Wise Use Movement." Using a campaign of misinformation and unsubstantiated allegations, the F.O.R. generated a great deal of fear about designation among the residents of the three Massachusetts communities.

Ultimately, the F.O.R. provoked enough concern that the towns' selectmen were forced to hold special town meetings to reconsider the issue of designation. Despite the concerted efforts of local residents who supported designation and the Farmington River Watershed Association, all three towns voted to rescind their earlier decisions supporting designation. Otis residents voted to rescind by a large margin; the votes were more closely contested in Sandisfield (136-103) and Tolland (51-27). Of the three, Otis was the only one to take the additional step of passing a second motion stating the town's opposition to designation.

The dates and results of the town meeting votes in Massachusetts are presented in **Figure 6-1**. Additional information on the battle over designation in Massachusetts, including some of the material distributed by the "Friends of the Rivers" and information prepared in response by supporters of designation, is provided in **Appendix D**.

River Protection Actions

As described in the "Private Lands" portion of **Subsection 4.1.1: Land Management** for the Massachusetts segment, in 1991 the Town of Tolland adopted a "River Protection District" that prohibits new structures and sand and gravel operations in the river's 100-year floodplain or within 200 feet of the river. The district also includes restrictions on vegetation removal (a 50-foot no-cut zone and limitations on cutting in the area from 50-200 feet from the river), and prohibits new septic facilities within 150 feet of the river. These features make Tolland's ordinance the strongest local conservation action implemented by any of the riverfront towns during the study, and is indicative of the Town's commitment to do its part in protecting the river.

Also, the Town of Becket adopted a strong floodplain zoning overlay district during the study period. Although the adoption of this bylaw was more directly related to a parallel effort to protect the Westfield River in the eastern part of Becket, the town-wide ordinance does provide additional protection to flood-prone areas in the headwaters of the Farmington River as well.

Neither Otis nor Sandisfield implemented any new local mechanisms to strengthen protection for the river and eliminate the vulnerabilities identified for each in the Draft Evaluation of Existing Protection. (See the town-by-town summaries of the strengths and weaknesses of local protection in **Subsection 8.2: Protection Mechanisms.**)

Results of Landowner/Resident Questionnaire

A total of 68 residents in the four Massachusetts towns responded to the "Landowner and Resident Questionnaire," representing a return rate of about 3.5 percent of the surveys distributed in those communities. In general, the respondents strongly supported conservation of the river. Over 90 percent felt that the river's water quality, free flowing character, fishing and canoeing should be protected and that the adjacent wildlife habitat, forest land, historic resources, scenic values and rural character should be conserved. Over 80 percent felt that hydroelectric development, future water supply use, sand and gravel extraction, and sewage transportation should be discouraged.

Regarding potential mechanisms to strengthen protection of the Farmington, more than 90 percent of the respondents supported new requirements for building set backs, vegetative screening, and height limitations on new buildings. Over 80 percent supported low density zoning and voluntary donation of conservation easements.

FIGURE 6-1
Results of Town Meeting Votes in the Massachusetts Study Area Towns

Town [a]	Date of Town Meeting	Result
Otis	5/21/91 1/30/92	Support designation Rescind earlier support & oppose designation
Sandisfield	5/18/91 2/1/92	Support designation Rescind earlier support
Tolland	2/12/91 3/7/92	Support designation Rescind earlier support

[a] The Town of Becket did not hold a formal town meeting vote regarding designation.

Complete results of the "Landowner and Resident Questionnaire" are provided in **Appendix E.**

6.1.2 State Government

Two primary factors were considered in identifying the extent of state support: (1) tangible conservation actions taken by state agencies during the study to strengthen protection of the river; and (2) official statements made regarding the state's position on federal designation.

Agency Actions

In addition to the ongoing implementation of its significant land and water management responsibilities (as described in **Section 4.1**), the Commonwealth of Massachusetts demonstrated its commitment to protect the Farmington River through several actions taken during the Wild and Scenic River Study. Most notably, the Department of Environmental Management purchased two critical riverfront parcels: a 16.9-acre lot encompassing more than 2,000 feet of river frontage and located almost entirely within the 100-year floodplain; and a 450-acre parcel with more than 6,600 feet of river frontage, covering an important forested area with steep slopes on the river's east side. The combined cost for these acquisitions was $1.1 million, which is especially noteworthy in light of the severe budget constraints faced by the state at the time of their execution. In addition, the DEM contributed significant staff time over the course of the study, and provided special releases from the Otis Reservoir as part of the Instream Flow Study.

State Position

The DEM issued a formal statement on behalf of the Commonwealth regarding Wild and Scenic River designation at a public forum held by the Study Committee in January, 1993. The statement included the following passages:

> ...The Department [of Environmental Management] has been involved with Farmington River protection efforts prior to the commencement of the Federal Wild and Scenic Study. The DEM will continue to work toward protection of this valuable resource long after the Federal Wild and Scenic River Study is completed and the vote on federal designation...has been counted.
>
> ...The DEM is well aware of, respects and will defer to the town meeting votes against designation of the Farmington River as a federal Wild and Scenic River in Otis, Sandisfield and Tolland...
>
> ...The Commonwealth, through DEM, strongly supports all efforts for improved protection of the Farmington River, and has advocated federal Wild and Scenic designation as a legitimate and desirable means of such protection for both the Massachusetts and Connecticut Study Segments. However, unless and until local opinion as expressed by the town meetings of Otis, Sandisfield and/or Tolland should change, neither DEM nor any other agency of the Commonwealth will press for federal Wild and Scenic designation for the Massachusetts segment of the Farmington River.

The DEM reiterated this position at the Study Committee's final meeting on April 29, 1993 (see **Chapter 9: Conclusion**).

6.1.3 Regional Authorities

The Hartford Metropolitan District Commission's representatives on the Study Committee spoke in favor of strong protection for the Massachusetts segment on several occasions. This position was based on the District's interest in ensuring that the water flowing into the West Branch Reservoirs from the Massachusetts segment continues to be of high quality, in case the reservoirs are ever needed as a source for public supply.

The MDC also made significant contributions of staff and funding to the study; these are described in the discussion of the Connecticut Study Segment later in this chapter.

6.1.4 Private Organizations

The Farmington River Watershed Association was the primary private sector advocate for protection and federal designation of the Massachusetts Study Segment over the course of the study. The organization was particularly active in working with a local group in Sandisfield (then known as the "Citizens for Local Control") to promote designation during the debate over the issue in 1991-92. The FRWA also organized a river cleanup along the segment in 1990, and played an important role in encouraging other conservation actions, such as the passage of local shoreland zoning ordinances (successful in Tolland) and the establishment of a voluntary land protection program.

In the time since the Massachusetts towns voted to rescind their support of designation, the group formerly known as the Citizens for Local Control has continued to work for the protection of the Farmington. Now called the "Sandisfield Citizens Association," the group has initiated on-the-ground projects (including a river cleanup and a watershed mapping exercise) and has kept the dialogue about designation going in the hope that the communities may eventually reconsider the issue.

6.1.5 State Legislators

The Massachusetts study area lies within the districts of State Senator Jane Swift and State Representative Christopher Hodgkins. Both Senator Swift and Representative Hodgkins were strong supporters of protecting the river over the course of the study, and both publicly stated their support for Wild and Scenic River designation during the extended debate on the issue in the Massachusetts towns in the winter of

1991-92. Each acknowledged, however, that the decision on whether to pursue designation ultimately rested with the towns along the river.

6.1.6 Members of Congress

The Massachusetts portion of the Farmington River study area lies entirely within the state's 1st Congressional District. The late Silvio Conte, who represented this district for more than thirty years until his death in 1991, was a strong supporter of the river's protection and played a crucial role in securing funding for the Wild and Scenic River Study. Following Congressman Conte's death, John Olver was elected to represent the 1st District. In January, 1992, Congressman Olver issued a joint statement with Congresswoman Nancy Johnson from Connecticut expressing their mutual position regarding federal designation of the Farmington. The statement included the following passages:

> ...While we appreciate the significance of the Farmington River and would welcome the opportunity to sponsor legislation to ensure its long-term protection, we will initiate this action only if there is a strong indication of local support. We will measure local support through two principal indicators: Town Meeting votes endorsing designation; and a demonstration of town commitment to protect the river through effective local control, such as a river protection overlay district.
>
> ...We believe that the Farmington River deserves strong protection, but we remain convinced that this can only be achieved through a mechanism that will ensure the continuation of private land ownership and local authority over land use along the river. Federal acquisition and management of land are inappropriate and unacceptable given these long-standing traditions of the Farmington River Valley. We pledge our assurance that no legislation concerning the Farmington River will go forward that violates these principles. We look forward to working with the many interests involved to achieve a solution that will integrate both conservation of this important resource and the legitimate concerns of landowners and residents of the riverfront communities.

The full text of Congressman Olver's and Congresswoman Johnson's joint statement is included in **Appendix F**.

Staff for U.S. Senators Edward Kennedy and John Kerry expressed the Senators' support for the study process on several occasions. However, neither Senator Kennedy nor Senator Kerry took a formal position on designation during the study.

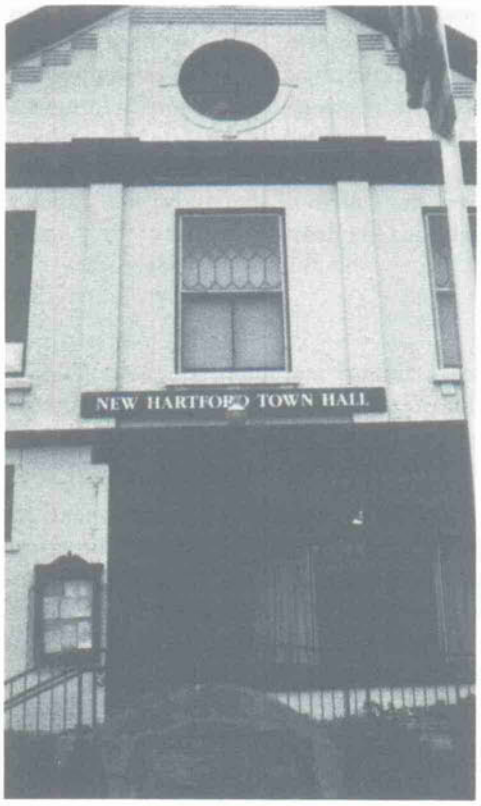
6.2 Connecticut Study Segment

6.2.1 Local Communities

As in Massachusetts, indications of local attitudes regarding river protection and designation in the Connecticut study towns were obtained through several mechanisms. The most important of these were official town meeting votes held in each of the communities involved in the project, and local river protection actions that were implemented during the study. The results of the landowner/resident questionnaire that was distributed to every postal customer in the study area were also noted, as were certain special activities that occurred in the towns.

Town Meeting Votes

All five Connecticut towns involved in the study voted overwhelmingly in support of Wild and Scenic River designation at formal town meetings in 1990 and 1991.[40] The resolutions passed by the communities included the following passages:



In keeping with the New England tradition of local control, each of the study towns held formal town meeting votes to decide on Wild and Scenic River designation.

[40] Although it does not directly abut the Connecticut Study Segment, the Town of Colebrook was encouraged to hold a formal vote on designation in light of its active participation throughout the study and because it encompasses the Still River/Sandy Brook system, the principal tributary to the segment.

FIGURE 6-2
Results of Town Meeting Votes in the Connecticut Study Area Towns

Town	Date of Town Meeting	Result
Colebrook	10/15/90	Support designation
Hartland	2/25/91	Support designation
Barkhamsted	10/30/90	Support designation
New Hartford	11/6/91	Support designation
Canton	7/30/91	Support designation

> Be it resolved that the people of the Town of _____ petition the Congress of the United States of America that the Farmington River be designated as a Wild and Scenic River with the understanding that such designation would be based on the locally-developed river [management] plan and would not involve federal acquisition or management of lands.
>
> Be it further resolved that the townspeople urge our elected officials to consider and, wherever appropriate, to adopt additional local measures that will strengthen the Town's protection of this critical resource.

The dates of the town votes are shown in **Figure 6-2** above. An example of the complete resolution passed by each of the communities is included in **Appendix G.**

River Protection Actions

In addition to their votes in support of federal designation, all four of the towns directly abutting the Connecticut Study Segment took important actions to protect the Farmington River during the study. Of greatest significance were the "River Protection Overlay Districts" adopted by each of the communities as part of its local zoning ordinances. (See the "Private Lands" portion of **Subsection 4.2.1: Land Management** for the Connecticut segment.) The 100-foot buffer zone created by these districts provides strong protection for the natural integrity of the Farmington's immediate shorelands, thereby protecting the river's water quality, fish and wildlife habitat, and scenic character. Passage of these ordinances is indicative of the towns' strong commitment to do their part in protecting the river.

Results of Landowner/Resident Questionnaire

A total of 576 residents in the five Connecticut study towns responded to the "Landowner and Resident Questionnaire," representing a 5.8 percent return rate of the surveys distributed in those communities. Overall, the respondents overwhelmingly supported conservation of the river. More than 90 percent felt that the river's water quality, free flowing character, and fisheries should be protected, and that the adjacent wildlife habitat, forest land, historic resources, scenic and rural character should be conserved. Over 80 percent of the respondents discouraged sand and gravel extraction and sewage transportation, and over 60 percent believed that new hydroelectric development and water supply diversions should be discouraged.

Over 90 percent of the respondents supported new requirements for building setbacks, vegetative screening, and timber harvesting restrictions. More than 80 percent also supported height limitations on new structures, stronger restrictions for building in the 100-year floodplain, low density zoning, voluntary donation of conservation easements and stronger enforcement of existing regulations.

Complete results of the "Landowner and Resident Questionnaire" are provided in **Appendix E.**

Other Indications of Community Support

In addition to the more formal evidence of local support described above, other activities occurred over the course of the study that further demonstrate the Farmington River's importance to the adjacent communities. One example particularly stands out: the efforts of the 1990-91 fifth grade class at the Barkhamsted Elementary School, who generated a great deal of community awareness about the river and the study through a variety of creative activities. The students made posters of river scenes to publicize Study Committee meetings, developed a slide presentation about the river that they showed to all of the school's classes, wrote stories of their experiences with the river that were included in a "Book of Memories," and worked with a group of senior citizens to tabulate the responses of the more than 600 "Landowner and Resident Questionnaires" that were returned from the Massachusetts and Connecticut study area towns. The students' commitment earned them a citation from the Connecticut General Assembly and a commendation from the

U.S. Environmental Protection Agency's "President's Environmental Youth Awards" program. Examples of their work are presented on the chapter dividers throughout this report.

Also noteworthy was the failure of the opponents of designation in Massachusetts to make any headway in generating opposition in Connecticut. In the spring of 1992, following the reversal of local support in the Massachusetts towns, the "Friends of the Rivers" attempted to rally opposition to designation in the Connecticut towns. The effort was unsuccessful because of the strong support for designation among local residents, community leaders, and the Farmington River Watershed Association.

6.2.2 State Government

As in Massachusetts, the two primary indicators of state support that were considered for the Connecticut segment were (1) conservation actions taken by state agencies during the study, and (2) official statements made regarding the state's position on federal designation.

Agency Actions

In addition to the ongoing implementation of its considerable land and water management responsibilities (as described in **Section 4.2**), the State of Connecticut demonstrated a strong commitment to protect the Farmington River through additional actions taken over the course of the study. In particular, the Department of Environmental Protection purchased two critical riverfront parcels along the study segment, totalling 123 acres and approximately 3,000 feet of river frontage at a cost of $325,000. The DEP also committed to establish special provisions to ensure protection of the high water quality in the segment. These provisions, which include a prohibition on new point source discharges into the segment or its tributaries, are described in detail in the "Water Quality" portion of **Subsection 4.2.2: Water Resources Management**.

The DEP also made significant contributions directly to the study process. These included the dedication of substantial amounts of staff time from several parts of the agency, administration of the Instream Flow Study, and in-kind assistance such as providing the use of a field office in the Farmington Valley for project staff.

State Position

Governor Lowell P. Weicker, Jr., an original sponsor of the study legislation when he was a U.S. Senator, expressed support for the study process on several occasions. In a February, 1992 letter to the Barkhamsted Selectmen, Governor Weicker stated that he considered "the study process and the effort to evaluate the various methods of preserving one of the most beautiful rivers in Connecticut [as] a very desirable undertaking...," and that he was "pleased to fully support the study process and look[ed] forward to being able to support Wild and Scenic designation once the study is completed."

The Deputy Commissioner of the DEP subsequently expressed the agency's support of designation at a hearing of the Connecticut General Assembly's Environment Committee in January, 1993. The State's final position, endorsed by the Governor, was conveyed at the Study Committee's final meeting on April 29, 1993 (see **Chapter 9: Conclusion**).

The Connecticut General Assembly pronounced its support for protection and designation of the Farmington with the passage of Public Act 93-256, signed into law on June 23, 1993. This statute included the following passages:

> It is declared to be the policy of the State of Connecticut that the portion of the Farmington River which is the subject of the authorized study by the Farmington Wild and Scenic River Study Committee for purposes of designation as a National Wild and Scenic River...be preserved as provided for in the federal Wild and Scenic Rivers Act....
>
> The commissioner of environmental protection shall cooperate with all relevant federal state and local agencies to provide for such designation and to implement any management plan developed in accordance with the Wild and Scenic Rivers Act...

The full text of the relevant sections of Public Act 93-256 is included in **Appendix H**.

6.2.3 Regional Authorities

The Metropolitan District Commission, the primary regional authority involved in the study, made significant contributions directly to the study process. For example, the District provided $75,000 to the Connecticut DEP to help fund the Instream Flow Study. This amounted to nearly half of the $160,000 direct budget for that project (the remainder of which was covered by congressional appropriations through the National Park Service). Without the MDC's contribution, a full-scale instream flow study could not have been accomplished. In addition, the MDC dedicated substantial amounts of staff time, particularly over the course of the Instream Flow Study and the development of the Upper Farmington River Management Plan.

The MDC testified in support of Wild and Scenic River designation at a hearing of the Connecticut General Assembly in January, 1993. This was the District's only formal public statement on the issue prior to the Study Committee's final meeting on April 29, 1993.

6.2.4 Private Organizations

Throughout the study, the Farmington River Watershed Association was the principal private, nonprofit group to advocate for protection of the river and for Wild and Scenic River designation, and the organization worked diligently to achieve that goal. The group committed extensive staff and volunteer time to the study process, and initiated a number of new programs that were directly related to the study's objectives. The FRWA played an instrumental role in galvanizing

support in the riverfront towns for the River Protection Overlay Districts and the resolutions supporting designation that were passed at town meetings. Among other actions, the group launched a private land protection program, urged the State of Connecticut to acquire key riverfront parcels, and organized annual river cleanups involving hundreds of volunteers over a five year period.

Two other nonprofit groups in the Farmington Valley — the Farmington River Anglers Association (FRAA) and the Farmington River Club (FRC) — advocated strongly for federal designation and initiated on-the-ground projects to help conserve the river. Both organizations formally endorsed designation at a public forum in January, 1993. With respect to specific conservation actions, the FRAA was involved with several important efforts: developing the proposal for state acquisition of the 120 acre "Shaw-Gates" parcel in Hartland; promoting the establishment of the "Trout Management Area" in Barkhamsted and New Hartford; initiating a cooperative streambank stabilization project in Barkhamsted; and organizing periodic river cleanups. The FRC also sponsored frequent river cleanups by its members.

In addition to the FRWA, the FRAA, and the FRC, many other private organizations at the local, regional, and national levels publicly endorsed Wild and Scenic River designation for the Connecticut Study Segment. They include:

* American Rivers, Inc.
* American Whitewater Affiliation
* Sierra Club (Connecticut Chapter)
* National Audubon Society
* National Wildlife Federation
* Isaac Walton League
* National Parks and Conservation Association
* Trout Unlimited
* West Virginia Rivers Alliance
* Appalachian Mountain Club (Connecticut Chapter)
* Connecticut Ornithological Association
* Housatonic Valley Association
* Connecticut River Watershed Council
* Quinnipiac River Watershed Association
* Farmington Land Trust
* Greenwoods Garden Club
* Farmington Valley Garden Club

Appendix I presents the Farmington River Anglers Association's written endorsement of designation as an example of the testimony of support from private organizations.

6.2.5 State Legislators

The entire Connecticut Study Segment lies within the district of State Senator James Fleming, who served on the Farmington River Study Committee as a discretionary appointee of the Secretary of the Interior for the full duration of the study. Senator Fleming was a strong advocate of designation throughout the project, and introduced the resolution supporting designation and protection of the Farmington that later became Public Act 93-256.

The study area includes parts of the districts of three State Representatives: Jesse Stratton, F. Philip Prelli, and Richard Ferrari. Each of these legislators expressed strong public support for designation on several occasions. Representative Stratton also joined Senator Fleming in introducing the resolution that became Public Act 93-256.

Annual river clean-ups sponsored by several local organizations have given residents and river users an opportunity to get involved in "hands-on" river conservation.

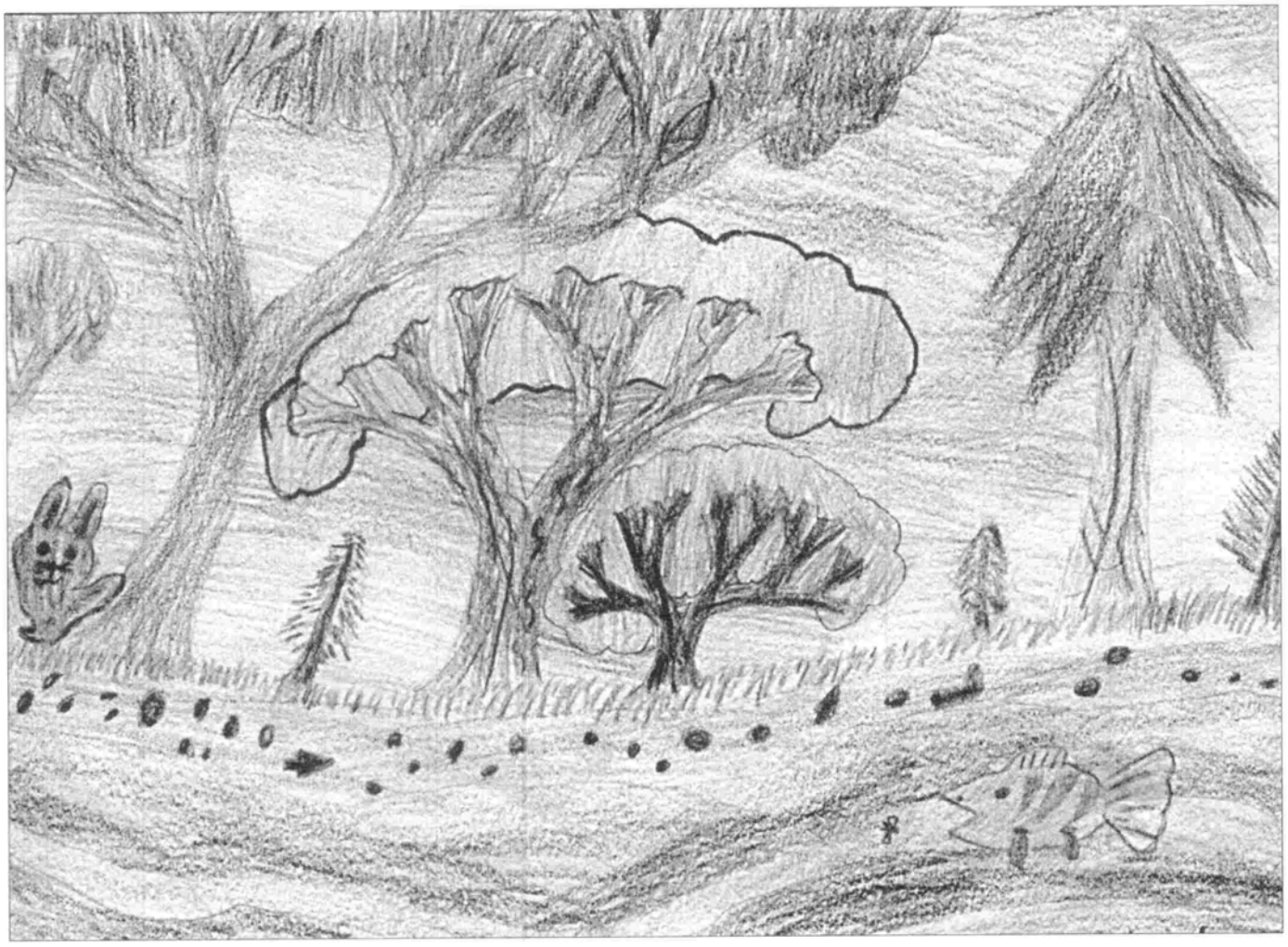
6.2.6 Members of Congress

The entire Connecticut Study Segment lies within the state's 6th Congressional District, which has been represented since 1983 by Congresswoman Nancy Johnson. Congresswoman Johnson was the primary sponsor of the legislation that authorized the Farmington River Study, and remained a steadfast champion throughout the project. She played an important role in challenging her constituents in the study towns to do their part to protect the river through local actions, and provided crucial reassurance to the communities that Wild and Scenic River designation could be achieved while

maintaining private land ownership and local control over land use. As described earlier in **Subsection 6.1.6**, Congresswoman Johnson articulated her position on protecting local interests in the context of designation in a joint statement she issued with Congressman John Olver in January, 1992. (See **Appendix F** for the complete text of the joint statement.) The Congresswoman subsequently reiterated that position in a constituent mailing distributed to all residents of the five Connecticut study towns in February, 1992.

On the Senate side, Connecticut Senators Joseph Lieberman and Christopher Dodd both expressed their support for protection of the river at several points during the study.

In addition to their support of the study process, Congresswoman Johnson and Senator Lieberman played critical roles in securing the passage of legislation to designate the Connecticut segment into the National Wild and Scenic Rivers System. Their efforts are described in **Postscript: Designation of the Connecticut Segment.**



Chapter 7: The Upper Farmington River Management Plan

My dad had organized a picnic at Peoples State Forest for the people he worked with at Digital. First we played games and ate.

Afterwards we decided to go to the river, most of us went swimming. I went swimming with my dad's friend. I loved the cool water, the feel of the leaves and the gentle current. We would let the current push us downstream then we'd swim back up. When we were going back I saw a nest of beavers. I could hear the birds chirping, this meant alot to me, that's why I think we should keep it the way it is.

Joseph Masselle

This chapter presents a summary of the comprehensive river management plan that was prepared for the Connecticut Study Segment in the latter stages of the study process. The document, entitled the Upper Farmington River Management Plan, was adopted by a unanimous vote of the Farmington River Study Committee at its final meeting on April 29, 1993. The full text of the Plan is published as a companion to this report.

Traditionally, a river management plan is prepared following Wild and Scenic River designation. In this instance, however, the study participants concluded that it would be impossible to consider the issue of designation without first knowing how the river would be managed following designation. Furthermore, they felt that a comprehensive management plan was needed to protect river-related resources regardless of whether the river was ever designated. The subsequent completion of the Upper Farmington River Management Plan marks the first time in the history of the Wild and Scenic Rivers System that a comprehensive management plan has been completed during the study period, prior to designation.

The Plan articulates a vision for future management of the uppermost segment of the river in Connecticut and its adjacent lands. It also proposes complementary actions that might be taken upstream and downstream of that area. The document consists of six parts:

1. ***Approach to Resource Management:** This section describes the basic philosophy that underlies the Plan, and presents the goals that guided the Plan's development. It also describes how designation as a National Wild and Scenic River would affect the river and the various parties involved in river management.*
2. ***Administrative Framework:** This section describes the organizational structure that will oversee implementation of the Plan and long-term protection of the river.*
3. ***Resource Management:** This section, by far the most extensive, is the main body of the Plan. The section is divided into three primary parts: land resources, water resources, and outstanding resources. For each, the Plan identifies actions that will be undertaken, objectives and standards to guide those actions, and specific provisions related to Wild and Scenic River designation.*
4. ***Education and Outreach:** This section identifies a number of activities that could be initiated to increase public awareness of the river's values and techniques for managing it wisely.*
5. ***Management of the Massachusetts Segment:** This section describes how Wild and Scenic River designation of the Connecticut segment will affect the river in Massachusetts, and presents recommendations for management of the river in Massachusetts. It also identifies the steps that would need to be taken to obtain Wild and Scenic River designation for the Massachusetts segment.*
6. ***Downstream River Management:** This section presents recommended actions that would help protect the lower portion of the river and complement the actions being taken further upstream.*

The Management Plan is directed to local governments, the states of Connecticut and Massachusetts, federal agencies, regional authorities, private organizations, residents of the river corridor, river users, and others who care about the future of the upper Farmington River. A basic tenet of the Plan is that all of these interests will have to work together if the river is to be protected and the Plan's goals are to be achieved.

The Plan does not contain a prescription for every situation that could confront river managers. Instead, it provides a vision for the future of the river and a context for interpreting and acting on future events. The Plan creates a specific mechanism — the Farmington River Coordinating Committee — to address future management issues.

The Plan focuses primarily on the Connecticut Study Segment. That stretch of the river receives primary emphasis because the Connecticut study towns had already demonstrated strong support both for river protection and for Wild and Scenic River designation at the time the Plan was prepared. Given the lack of local support in the Massachusetts communities at that time, a comparable amount of energy was not expended in developing a comprehensive management plan for the Massachusetts Study Segment. Nonetheless, the Plan does include recommendations for management of the river in Massachusetts, and is intended to be readily amendable in the event that the Massachusetts towns decide to seek designation.

*As explained in **Subsection 1.1.2: Requirements for Designation**, an evaluation of the adequacy of an existing or proposed management framework is the third component in determining the suitability of a private land river for Wild and Scenic designation. The summary of the Upper Farmington River Management Plan presented in this chapter provides the foundation for that evaluation, which is presented in **Subsection 8.3.3: Management Framework**.*

The Upper Farmington River Management Plan articulates a vision that will provide for long-term protection of the Connecticut Study Segment's outstanding values through compatible management of its land and water resources. This view is looking upstream toward the Route 318 bridge in Pleasant Valley.

7.1 Approach to Resource Management

7.1.1 Goals

As described in **Section 1.4**, in September 1989 the Farmington River Study Committee adopted a set of goals to guide the study process and future management of the upper Farmington River. These goals provided the foundation for the development of the Management Plan. They are:

1. Conserve and enhance important land-based natural and cultural resources, including wildlife habitat, forests, diverse landscapes, and the scenic and historical character of the Farmington Valley.
2. Encourage effective management of river-related growth that will protect the river's special qualities, and that will emphasize existing local control and the rights of private property owners.
3. Balance the legitimate demands on the river for water supply, waste assimilation, energy production, and commercial and industrial uses, while maintaining stream flow and water quality necessary to sustain fisheries, recreation and scenic qualities at levels sufficient for Wild and Scenic River designation.
4. Manage river recreation to minimize resource degradation and impacts on private and public landowners, while providing for appropriate recreational use and public access.

7.1.2 Management Philosophy

The above goals give direction as to what the Management Plan seeks to accomplish. Of equal concern is the issue of how these goals should be accomplished. To address this issue, the Study Committee defined a management philosophy to guide the development of the plan. This philosophy incorporates the following basic elements:

- Resource conservation should be fully integrated with traditional patterns of use, ownership, and jurisdiction.
- River management should be accomplished through cooperation among all public and private organizations with an interest in the river.
- Long-term resource protection should rely on existing programs and authorities rather than on new layers of bureaucracy.
- Future management should be based on a cooperatively developed plan which establishes resource protection standards and identifies key actions.

7.1.3 Wild and Scenic River Considerations

The Plan includes the following fundamental principles related to Wild and Scenic River designation that will apply to the Connecticut segment:

- The river will be protected from any new water resource project requiring a federal permit, license, or funding that would have a direct and adverse effect on the segment.
- Designation will be carried out through a nontraditional approach, with the federal government as a partner rather than the primary manager. The National Park Service will serve as the key federal representative, and will review federally assisted water resource projects that could adversely affect the river. The NPS also may provide technical assistance, staff support, and/or funding appropriated by Congress for river management.
- To safeguard the interests of landowners and other parties, the following will apply:
  1. There will be no acquisition of lands by the federal government — through condemnation or otherwise — in conjunction with designation.
  2. There will be no federal management of non-federal lands.
  3. The river area will not become a national park and will not be subject to the federal regulations governing national park units.
  4. No new federal permits will be required as a result of designation.
- The Plan is intended to satisfy the requirement for a comprehensive river management plan of Section 3(d) of the Wild and Scenic Rivers Act and, therefore, will constitute the official framework for future management of the river.
- The linear area proposed for designation was the segment of the West Branch and mainstem extending from immediately below the Goodwin Dam and Hydroelectric Project in Hartland to the downstream end of the New Hartford/Canton town line — that is, the Connecticut Study Segment. With respect to lateral boundaries, the Study Committee concluded that because most of the Farmington River corridor is in private ownership and because some issues — notably water quality — involve the entire watershed, defining a distinct lateral boundary would serve no useful purpose and, indeed, could be counterproductive.

Additional details related to designation for specific resource management issues are described under the heading "Wild and Scenic River Provisions" in **Subsection 7.3: Resource Management**.

7.2 Administrative Framework

The Plan lays out a structure for administration of the Connecticut segment that will provide for ongoing coordination and communication among the many interests involved in the upper Farmington River area. An underlying principle in this framework is that existing institutions and authorities will provide the foundation for the long-term protection of the upper Farmington River. Landowners, riverfront communities, the state, the MDC, advocacy and user groups, and federal agencies all will have active and indispensable roles in maintaining the high quality of the river system. From an administrative perspective, the principal need is for a mechanism to coordinate the activities of those interests in managing the river and its corridor.

There are two key parts to the administrative framework:

1. The establishment of a broadly representative committee — the "Farmington River Coordinating Committee" — to link all of the players together on a long-term basis. This group will build upon the work and successes of the Farmington River Study Committee in seeking increased cooperation among all river interests.
2. The development of agreements among the various parties involved in river management. These agreements will reinforce the current consensus to work cooperatively in implementing the Plan and pursuing the long-term protection of the upper Farmington River.

7.2.1 Farmington River Coordinating Committee (FRCC)

Purpose

The purpose of the FRCC is to promote the long-term protection of the designated segment by providing a mechanism for communication and coordination among the many entities with an interest in the river.

Function

The FRCC will have an advisory role only; it will not have regulatory authority or land acquisition authority.

Responsibilities

Address river-related issues: The FRCC will pursue cooperative resolution of current and future issues affecting the upper Farmington River.

Monitor activities that might affect the river: The FRCC will evaluate specific proposals that could affect the segment, and will provide comments as it deems necessary to the appropriate authorities.

Stimulate public involvement and education: The FRCC will provide opportunities for the public to become

aware of, and participate in, efforts to resolve issues that affect the river.

Promote river enhancement initiatives: The FRCC will support river enhancement projects initiated by its members or other groups, contingent on endorsement by the Committee.

Review and update the Upper Farmington River Management Plan: The FRCC will be responsible for reviewing the Plan on a regular basis (recommended for every five years), and updating it as necessary.

Prepare periodic status reports: The FRCC will prepare brief reports every 3-5 years on the status of river protection and implementation of the Plan. These reports will be provided to the general public, local officials, the Governor, the General Assembly, the Secretary of the Interior, and the U.S. Congress.

Membership

The FRCC will consist of one representative and one alternate from each of the following:

* Colebrook
* Hartland
* Barkhamsted
* New Hartford
* Canton
* State of Connecticut
* Metropolitan District Commission
* Farmington River Watershed Assoc.
* National Park Service

Membership may be expanded to include other representatives, including the State of Massachusetts, the Massachusetts riverfront towns (Becket, Otis, Sandisfield, and/or Tolland), downstream towns, and other river interests.

Decision-making

All Committee decisions and actions will be made by unanimous expressed consent of all voting members.

Funding/Staff

To implement the responsibilities identified above, the FRCC will likely require direct funding and possibly in-kind assistance. Funds may be needed for the following: (1) to hire staff to coordinate the Committee's activities; (2) to undertake specific projects; and/or (3) to cover costs related to general operations or specific responsibilities (office space and equipment, printing and distributing information, education and outreach, etc.).

Federal funds to support the Committee will be pursued through Congressional appropriations to the National Park Service for a start-up period of 3-5 years. For long-term funding needs or for specific projects, the FRCC may wish to pursue financial assistance and/or in-kind contributions (office space, equipment, etc.) from individuals, foundations, corporations, and government (federal, state, and/or local).

7.2.2 Management Agreements

The Plan calls for three types of management agreements to be established:

1. The FRCC will develop a written agreement to be adopted by its member institutions. This agreement will establish a cooperative commitment among the members to participate in long-term management and to implement those parts of the Management Plan under their jurisdiction or to which they have been assigned specific responsibility.
2. The Connecticut Department of Environmental Protection and the National Park Service will take the lead in ensuring consistency with the Plan in the actions of state and federal agencies, respectively.
3. The National Park Service may enter into formal cooperative agreements with the FRCC or any of its member organizations pursuant to Section 10(e) and/or Section 11(b)(1) of the Wild and Scenic Rivers Act. Such

One of the many meetings held by the River Conservation Planning Subcommittee to discuss and draft the Management Plan.

agreements could include provisions for limited financial or other assistance from the federal government to facilitate the protection and management of the upper Farmington River.

7.3 Resource Management

7.3.1 Overview

This section of the Plan describes a detailed management program that will provide long-term protection for the upper Farmington River and its outstanding fisheries, recreation, wildlife, and historic values. The discussion is divided into three parts: Land Resources, Water Resources, and Outstanding Resources. These are further subdivided into more specific categories, as indicated below.

Land Resources:	Private Lands Public Lands
Water Resources:	Water Quality Water Quantity Channel, Bank, and Wetland Protection
Outstanding Resources:	Recreation Resources Fisheries and Wildlife Historic Resources

For each resource management category, the following are discussed:

Objectives establish a vision for future management. These objectives are intended to supplement the broad goals that were presented in **Section 7.1: Approach to Resource Management.**

Standards establish the basic criteria by which future management actions will be measured.

Key Actions identify the most essential actions required for managing river resources according to the defined standards.[41]

Wild and Scenic River Provisions include additional details of how national Wild and Scenic River designation will be implemented (i.e., the role of the National Park Service, specific policies and standards that will be linked to designation, and any additional actions that will be required of other entities to implement the designation).

[41] In the full version of the Upper Farmington River Management Plan, "Key Actions" is one of three components of the overall "Action Program." The other two components are "Supporting Activities," which identify other programs and actions currently in place that contribute to effective management, and "Additional Opportunities," which include recommendations for further actions that, while not required, could enhance resource management and protection.

7.3.2 Land Resources

Private Lands

Objective: Conserve the high water quality, ecological integrity, and scenic character of the segment and the upper Farmington River Valley through sensitive management of privately-owned shoreland and upland areas, without unduly restricting other uses of those lands.

Standards:

Shorelands: The shorelands along the river are the highest priority lands for protection. The River Protection Overlay Districts adopted in Hartland, Barkhamsted, New Hartford, and Canton will constitute the standard for shorelands protection on private lands. These districts establish a 100-foot setback for new structures, new septic systems, the removal of earth materials, and clear-cutting. Existing structures within 100 feet of the river are not affected, although the districts do establish limitations on the expansion of such structures.

Uplands: The Plan does not establish specific standards for the management of privately-owned upland areas beyond the 100-foot shoreland buffer. Although activities in upland areas can affect river values, existing regulations, incentive programs, and topography provide the segment with strong protection from potential adverse effects of upland management.

Key Actions:

Landowner Stewardship: Private lands will remain private; landowners will continue as the primary stewards of lands along the segment.

Local Land Use Management: Riverfront towns will implement and enforce their existing land use regulations, including the River Protection Overlay Districts, and other programs that provide protection to the river.

Wild & Scenic River Provisions: The federal government will not acquire private lands along the segment by condemnation or otherwise, nor will it regulate the use of those lands, as a result of Wild and Scenic River designation.

Furthermore, there will be no requirements for additional state or local land use regulation resulting from designation.

Public Lands

Objective: Conserve the high water quality, ecological integrity, and scenic character of the segment and the upper Farmington River Valley through sensitive management of publicly-owned shoreland and upland areas, without unduly restricting other uses of those lands.

Standards: **Shorelands:** Publicly owned shorelands will be managed in a way that will maintain or enhance their natural appearance and function. To achieve this, management will meet or exceed the protection measures specified by the River Protection Overlay Districts that have been adopted in each of the riverfront towns.

Uplands: Upland areas under public ownership within the segment's watershed will, to the extent reasonably possible, be managed in a way that will ensure protection of water quality and quantity, scenic views to and from the river, wildlife habitat, forest health, and the natural character of the upper Farmington River Valley.

Key Actions: **Management Practices:** The DEP, the MDC, and the towns will continue to manage their respective lands along the segment. Each landowner should review its current policies and practices for consistency with the objective and standards stated above, and revise them if necessary.

Land Transfers: Public lands will be kept in public ownership whenever possible.

Wild & Scenic River Provisions: There will be no additional requirements related to the management of public lands as a result of Wild and Scenic River designation.

7.3.3 Water Resources

Water Quality

Objective: Maintain or enhance the segment's existing high water quality.

Standards: **Point Source Discharges:** No new discharges from sewage treatment plants or industrial sites into the segment or its tributaries will be allowed. Increases to existing discharges will be allowed only if accompanied by improved treatment so that pollutant loading to the river is not increased.[42] For other new activities (e.g., storm water drains) that are regulated under Sec. 402 of the Clean Water Act (P.L. 95-217) and that would discharge directly into the segment, Best Management Practices will be required.

Non-point Source Pollution: The riverfront towns and the state will seek to avoid, reduce, or eliminate non-point source pollution impacts on the segment.

Key Actions: **Water Pollution Control Statutes:** The DEP will have primary responsibility for implementing state and federal water pollution control statutes.

Local Land Use Management: The riverfront towns will implement and enforce existing land use regulations, including the River Protection Overlay Districts, and other programs that protect water quality.

Land Stewardship: Landowners, both private and public, will help maintain the segment's high water quality through sensitive management of their lands.

Federal Regulation of Stream Alterations: For any project that would affect water quality through the discharge of material into the segment or an adjacent wetland, the Army Corps of Engineers will implement its responsibilities under Sec. 404 of the Clean Water Act in a manner consistent with the Plan's water quality standards.

Wild & Scenic River Provisions: The NPS will review new federal permit and grant applications that require federal approval under the Clean Water Act. This review will be limited to projects that would discharge directly into the segment or its tributaries. No project that would

[42] Minor increases in the concentration of certain substances that are not detrimental to the aquatic environment that would result from increases in existing discharges will not be precluded. See the Upper Farmington River Management Plan for further discussion.

have a direct and adverse effect on the segment's outstanding fisheries, recreation, and wildlife values will be allowed. Additional provisions regarding consultation and notification procedures among the DEP, NPS, FRCC, U.S. EPA, and the Army Corps of Engineers are included in the full version of the Plan.

Water Quantity

Objective: Provide flows necessary to maintain the segment's existing water quality and to sustain aquatic biota, wildlife, recreation and scenic values, while meeting legal release commitments, waste assimilation needs, and compatible water supply demand.

Standards: **Existing Flow Management:** The flow regime that has existed since the Goodwin and Colebrook Dams were constructed provides sufficient flows to maintain water quality and the resources that make the segment eligible for Wild and Scenic River designation. That existing flow regime is dictated by several legal commitments (as described in the "Water Quantity" portion of **Subsection 4.2.2: Water Resources Management**). The Plan does not propose, nor does Wild and Scenic River designation require, changes in the existing flow regime.

Modifications to Existing Flow Management: If changes to the existing flow regime are proposed, the following standards will apply:

Aquatic Biota: An equivalent or greater quantity and quality of fish habitat as existed historically under normal, dry, and drought conditions will be maintained.

Recreation Resources: An equivalent or greater quantity and quality of recreational opportunity as existed historically (from 1961-1990) under normal, dry, and drought conditions will be maintained.

Water Quality: Sufficient flows will be provided to comply with Connecticut's water quality standards, including the applicable anti-degradation standard for the Farmington River.

Surplus Water: After all the water resource needs are met, as identified in the Instream Flow Study, any surplus water available will be dedicated to enhancement of instream uses.

Emergency Uses: In a declared water supply emergency, public health and welfare will be given priority over instream needs.

Additional details on the meaning of these standards are provided in the Plan.

Key Actions: **Flow Management:** The MDC and the U.S. Army Corps of Engineers will manage flows from the West Branch Reservoirs in accordance with existing commitments. Any changes to those commitments that would cause changes in flow management in the segment must conform to the water quantity standards described above.

Water Supply Planning: Potential needs for water supply withdrawals from the West Branch will be determined through the state's water supply planning process and associated documents developed by the applicant.

Use of the Instream Flow Study: The Instream Flow Study will be used as a primary source of information in water management and planning.

State Regulation of Water Diversions: Any future withdrawal will require approval from the DEP under the Water Diversion Policy Act (C.G.S. 22a-365 et seq.).

State Water Quality Certification: The DEP will implement the water quality certification requirements of Sec. 401 of the Clean Water Act for any project affecting water quantity that requires a Clean Water Act discharge permit.

Federal Regulation of Stream Alterations: The Army Corps of Engineers will implement the permitting requirements of Sec. 404 of the Clean Water Act for any project affecting water quantity that would discharge dredged or fill material into the segment or an adjacent wetland.

State Regulation of Water Supply Emergencies: The DEP and the DOHS will maintain their authority to implement the state's water supply emergency statutes if conditions arise that necessitate such action.

Wild & Scenic River Provisions:

The NPS will review any proposed project involving flow alteration and requiring federal assistance through permits, licenses, funding, or other action and that would be on or directly affecting the segment. This would apply to projects upstream or on tributaries, as well as those on the segment itself. No project that would have a direct and adverse effect on the segment's outstanding fisheries, recreation, and wildlife values will be allowed.

Wild and Scenic River designation will not preclude Federal Energy Regulatory Commission approvals required for the continued operation of the Goodwin and Colebrook Hydroelectric Projects, nor will it supersede the existing authority of the Army Corps of Engineers for flood prevention through management of the Colebrook Dam and Reservoir.

Additional provisions regarding consultation and notification procedures among the DEP, NPS, FRCC, and the Army Corps of Engineers are included in the full version of the Plan.

Channel, Bank and Wetland Protection

Objective: Maintain or enhance the natural condition of the river system, including its free-flowing character, the integrity of the stream channel and banks, and the ecological functions of adjacent wetlands.

Standards:

Dams: In order to maintain the segment's free-flowing condition, no new dams will be allowed.

Other Alterations: No other new man-made alterations to the river's channel, banks, and adjacent wetlands that would degrade their natural appearance and function will be allowed, unless such an alteration is clearly in the interest of public health, safety and welfare and no feasible and prudent alternative exists.

Key Actions:

Federal Regulation of Stream Alterations: The Army Corps of Engineers will implement Sec. 404 of the Clean Water Act, which requires federal approval for any project that would discharge dredged or fill material into a river or wetland.

State Water Quality Certification: The DEP will implement the water quality certification requirements of Sec. 401 of the Clean Water Act for any project affecting the segment's channel, banks, or adjacent wetlands that requires a Clean Water Act discharge permit.

Local Land Use Regulation: The riverfront towns will implement and enforce existing land use regulations that protect the river's channel, banks, and adjacent wetlands.

Wild & Scenic River Provisions:

The NPS will review any proposed channel, bank, or wetland alteration that requires a federal permit, license, certification, or funding and that would directly affect the designated segment. No project that would have an adverse effect on the segment's free-flowing condition or its outstanding fisheries, recreation, and wildlife values will be allowed. No new dams will be allowed on the segment, and no new hydroelectric projects that would be on or directly affecting the designated segment will be allowed.

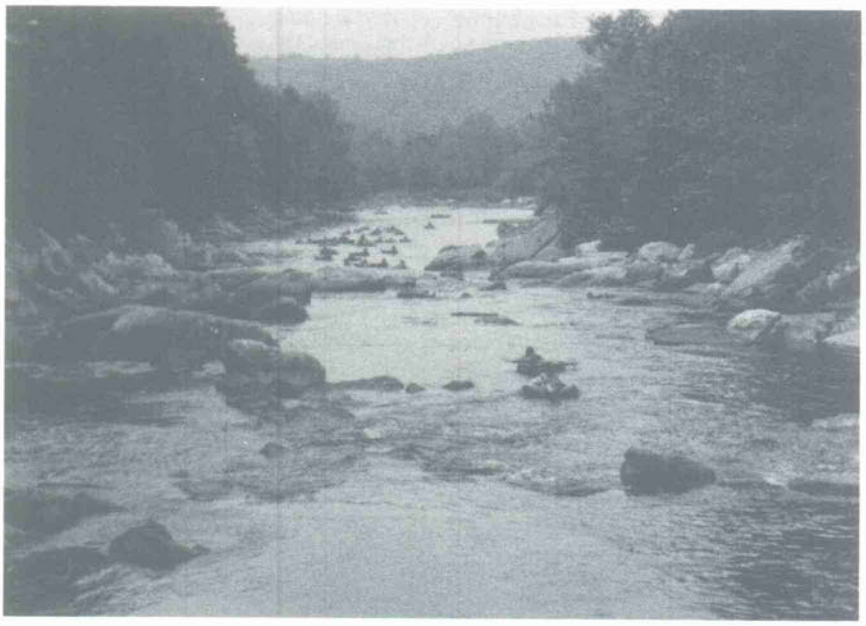
Wild and Scenic designation will not preclude the relicensing of the Colebrook Hydroelectric Project, nor the continued exemption of the Goodwin Hydroelectric Project.

Additional provisions regarding consultation and notification procedures among the DEP, NPS, FRCC, and the Army Corps of Engineers are included in the full version of the Plan.

7.3.4 Outstanding Resources

Recreation Resources

Objective: Protect and enhance the upper Farmington River's outstanding recreational resources.



The Management Plan directs the Farmington River Coordinating Committee to take the lead in promoting the cooperative resolution of issues related to river recreation. Tubers are shown here floating through Satan's Kingdom.

Standards:

Recreation Opportunities: Existing recreation opportunities will be maintained and enhanced.

Impacts on Land and Water Resources: Recreational activities and facilities will be managed in a way that will prevent degradation of land or water resources.

Access: Public lands will be relied upon to provide access to the river. Any access through private lands will be at the discretion of the landowner.

Key Actions:

Recreation Management on Public Lands: The DEP, the MDC, and the riverfront towns will continue to manage recreation on their respective lands along the segment. Land managers should review current policies and practices relating to recreation management for consistency with the objective and standards stated above, and revise them if necessary.

Regulation of Commercial Recreation: The DEP and the towns will regulate commercial recreation in accordance with their existing authorities.

Private Organization Initiatives: River advocacy and recreation user groups will continue to play an important role in recreation management.

Monitoring Recreational Use and Promoting Issue Resolution: The FRCC will take the lead in monitoring river recreation, identifying persistent issues associated with recreational use, and promoting the cooperative resolution of those issues. This may include developing a comprehensive recreation management plan.

Wild & Scenic River Provisions:

No additional requirements related to the management of recreation resources will result from Wild and Scenic River designation. The NPS will not regulate recreational use or require permits for commercial recreation activities.

Fisheries and Wildlife

Objective:

Protect and enhance the upper Farmington River's outstanding fisheries and wildlife resources.

Standards:

Habitat: The historical quality, quantity, and diversity of fish and wildlife habitat will be maintained and enhanced.

Sensitive Species: Populations of sensitive species, including Atlantic salmon, bald eagles, and osprey, will be maintained and enhanced.

Sport Fisheries: The upper Farmington River's high quality sport fishery will be maintained and enhanced.

Key Actions:

Fish and Wildlife Management: The DEP will retain responsibility for management of fish and wildlife.

Anadromous Fisheries Restoration: The Connecticut River Atlantic Salmon Commission will actively implement plans and programs to restore anadromous fish in the Farmington River basin.

Bald Eagle Restoration: The MDC, the DEP, and the U.S. Fish and Wildlife Service will continue their efforts to reestablish breeding pairs of bald eagles in the upper Farmington River watershed.

The Plan calls for the Connecticut Department of Environmental Protection to continue its leadership role in managing the Farmington's trout and salmon fisheries.

Wild & Scenic River Provisions:

There will be no additional requirements related to the management of fisheries and wildlife resources, and there will be no National Park Service role in such management, as a result of Wild and Scenic River designation.

Historic Resources

Objective:

Protect and enhance outstanding historic resources associated with the upper Farmington River.

Standards:

Historic Sites: The integrity of sites associated with the segment and listed on the National Register of Historic Places or Connecticut's State Register of Historic Places will be maintained.

Archaeological Sites: The integrity of sites that are important in understanding and interpreting the activities of prehistoric cultures in the upper Farmington River Valley will be maintained.

Key Actions:

Historic Preservation Laws: The Connecticut Historical Commission, the National Park Service, and the Advisory Council on Historic Preservation will continue to exercise their respective authorities to protect historic sites under C.G.S. 10-321a et seq. and the National Historic Preservation Act (P.L. 89-665).

Protection and Investigation of Archaeological Sites on Public Lands: The DEP and the MDC will review their existing management plans for the state forests and watershed lands for compatibility with the protection of important archaeological sites that are linked to the river, and will take additional actions if necessary to ensure the protection of those sites.

Wild & Scenic River Provisions:

There will be no additional requirements related to the management of historic resources as a result of Wild and Scenic River designation. NPS authority will be limited to that already established under the Historic Preservation Act.

7.4 Education and Outreach

Education and outreach will be a critical component of future management and long-term protection of the river. Organizations with existing education and outreach programs will be encouraged to continue and expand their efforts. In addition, the Farmington River Coordinating Committee will help to organize cooperative efforts among its membership and with other organizations. The Committee's objective will be to complement existing activities, rather than to duplicate them.

Examples of activities that might be initiated include:

* Developing a volunteer water quality monitoring program with students, local service organizations, and other residents;
* Providing hands-on opportunities for the public to experience the river (e.g., through nature hikes and canoe trips) and to help improve it (e.g., by working on river cleanups);
* Developing and distributing educational information about the river's special features and how the Management Plan will provide for their long-term protection and management;
* Providing information and assistance to landowners on techniques to enhance their stewardship of lands within the watershed of the segment;
* Establishing an awards program to recognize outstanding conservation achievements by individuals and groups in the upper Farmington River Valley;
* Promoting river-related activities in local schools, as well as with local service organizations and other groups;
* Establishing an information and interpretive center.

7.5 Management of the Massachusetts Segment

This section describes how implementation of the Management Plan and Wild and Scenic River designation of the Connecticut segment will affect the river in Massachusetts. It also provides recommendations for management of the Massachusetts segment. These recommendations are made in recognition of both the inherent resource values associated with the Massachusetts portion of the river, and the effect that river management in Massachusetts can have on the river in Connecticut.

7.5.1 Issues Related to Wild and Scenic Designation

With designation of the Connecticut segment, the National Park Service will review any proposed water resource project on the Massachusetts segment or its tributaries that requires federal permits, licenses, or funding. Any project that would have an adverse effect on the Connecticut segment will, in accordance with the Wild and Scenic Rivers Act, be prohibited. Any project that would reduce either the quality or quantity of water flowing into the designated segment downstream would be of particular concern. Federal agencies that typically have a role in the funding or approval of such projects, notably the U.S. EPA, the Army Corps of Engineers, and the Federal Energy Regulatory Commission, will be apprised of the special status of the Connecticut segment and informed of the requirements of the Wild and Scenic Rivers Act. The National Park Service will not have review authority over land use activities that are not water-related and that do not require federal permits or other federal assistance.

If the residents of the Massachusetts towns choose to seek designation at some point in the future, this could be pursued without additional study. Designation would be contingent upon:

1. Town votes in support of designation; and
2. Strengthening of land use regulations affecting the immediate shorelands in Sandisfield and Otis so that protection in those towns would be comparable to that provided in Tolland and the Connecticut towns.

Designation could be obtained either through Congressional action or through a request from the Governor for administrative designation by the Secretary of the Interior, as authorized under Sec. 2(a)(ii) of the Wild and Scenic Rivers Act. In either case, the Management Plan would need to be revised to include specific provisions for management of the Massachusetts segment. These provisions would need to be comparable, but not necessarily identical, to those identified in the Management Plan for the Connecticut segment.

While designation of the entire Massachusetts segment would be preferable, it would be possible to designate only a portion of the segment. For example, the stretch in Tolland and Sandisfield could be designated by itself, should those two towns desire such action.

7.5.2 River Management Issues

The Plan recommends that the Massachusetts segment be carefully managed to protect its inherent values and to prevent any negative impacts on the river downstream, regardless of whether designation is ever reconsidered. Landowners, local governments, private organizations, and state agencies should protect the river to the best of their abilities and to the extent of their jurisdiction. The Plan includes specific recommendations for each of those parties.

The Plan emphasizes that any of the Massachusetts towns and/or the state will be welcome to participate on the Farmington River Coordinating Committee, either upon its initiation or at some point in the future. This opportunity will be available regardless of whether the Massachusetts segment is ever designated as a Wild and Scenic River.

7.6 Downstream River Management

This section of the Plan focuses on the downstream portion of the river, which extends for some 50 miles and includes nine communities: Burlington, Avon, Farmington, Simsbury, East Granby, Bloomfield, Windsor, and Windsor Locks. It identifies actions that could be taken by these communities and others both to protect the downstream portion of the river and to support actions being proposed for the upper part of the basin. These are recommendations only, and their implementation is not required as part of the Upper Farmington River Management Plan. This section also addresses the issue of anadromous fish restoration in the downstream segment.

7.6.1 Local and Private Initiatives

The Plan recommends that the downstream towns pursue implementation of conservation actions, such as the River Protection Overlay Districts adopted upstream, that they deem relevant and beneficial. Opportunities for private organizations to help protect the lower part of the river also are noted. These include the FRWA's implementation of its "Regional Land Protection Program," the initiation of a volunteer water quality monitoring program, and the potential for local land trusts to focus their efforts specifically on the river.

7.6.2 Participation in the Farmington River Coordinating Committee

Downstream towns may want to consider participation in the Farmington River Coordinating Committee, either through formal membership or through less formal information exchange and cooperation on specific projects that involve both sections of the river. Downstream towns also may wish to establish a working committee among themselves to address river related issues that cross town lines.

7.6.3 Anadromous Fish Restoration

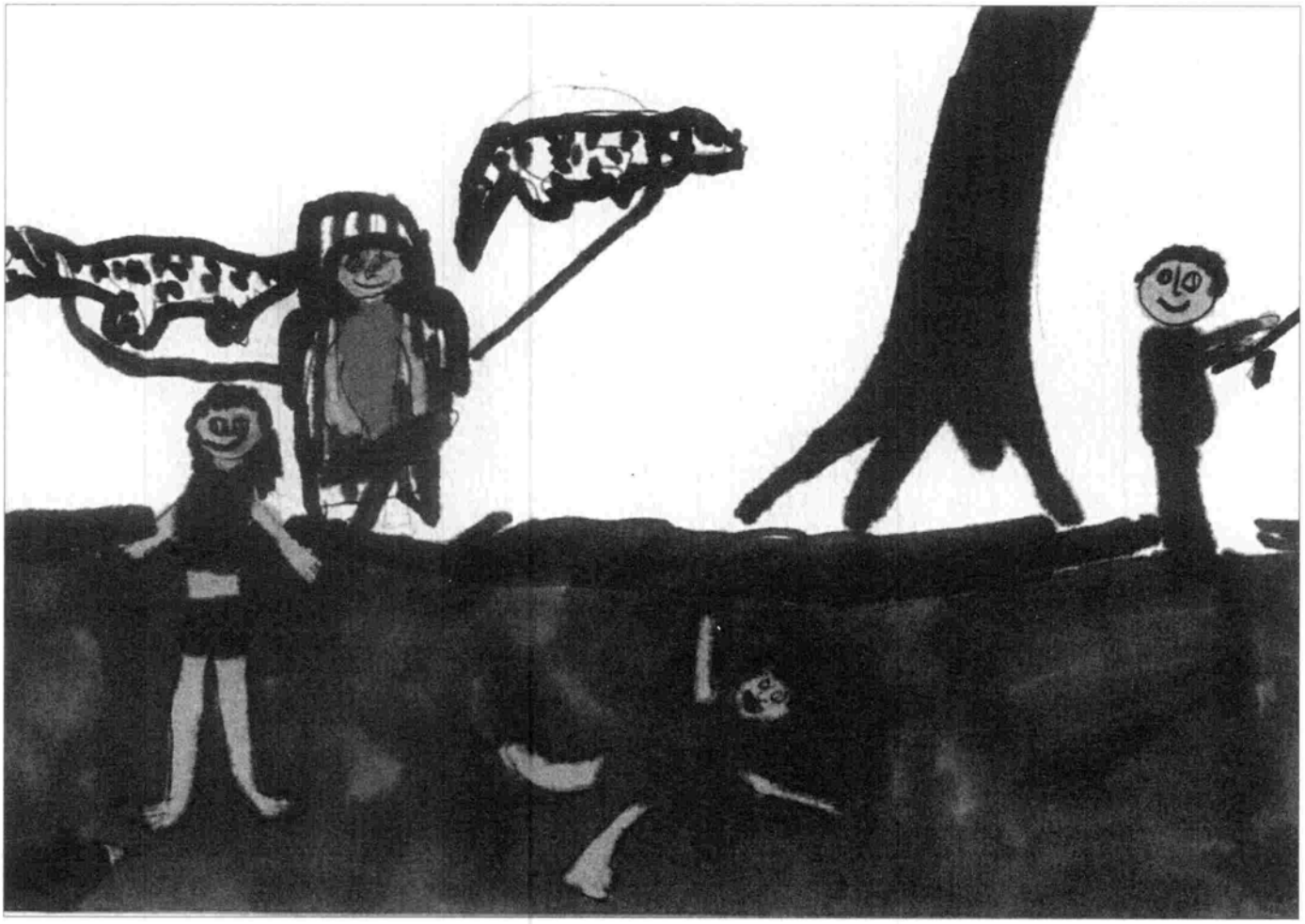
The Plan recognizes that efforts to restore and enhance anadromous fish in the upper Farmington River will be successful only if they are complemented by similar restoration efforts downstream. With Wild and Scenic designation of the upper segment, special management provisions to protect anadromous fish will apply both within the designated segment and in downstream areas. Specifically, the NPS will review any proposed water resource project requiring federal licensing, permitting, or funding to ensure protection of anadromous fish and consistency with the Plan. The NPS will consult closely with the DEP and the U.S. Fish and Wildlife Service (FWS) in this regard.

Passage, both upstream and downstream, is critical to the reestablishment of these fish to the Farmington River basin. The DEP, the FWS, and the Connecticut River Atlantic Salmon Commission should continue to use their authorities to pursue the establishment and maintenance of adequate passage facilities at the Upper and Lower Collinsville Dams and the maintenance of existing facilities at Rainbow Dam.

7.7 Adoption of the Management Plan

Upon its completion, the Upper Farmington River Management Plan was presented to the Study Committee for approval. At its final meeting on April 29, 1993, the full membership of the Study Committee passed the following motion by a unanimous vote:

> Be it resolved that: The Farmington River Study Committee adopt the Upper Farmington River Management Plan as providing a balanced approach to long-term protection and use of the Farmington River.



One day my mom, brother, and I went fishing in the west branch of the Farmington River. We spent the whole day and we saw plenty of fish, but didn't catch anything.

I'll always remember that day standing on a rock fishing and pulling the rod back and me missing my worm because of some annoying little fish. Even though we didn't catch anything, it's a fond memory of mine and I hope I have some more fishing trips there and catch something next time.

Nicole Dileo

This chapter presents the methodology and findings of the suitability analysis. Section 4(a) of the Wild and Scenic Rivers Act requires that the study report detail the river's suitability or nonsuitability for national designation. The Act does not specify criteria for determining suitability, but the term is generally interpreted as requiring an evaluation of first, whether the river would be an appropriate addition to the national system, and second, whether Wild and Scenic River designation would be an appropriate part of long-term management for the river. For rivers such as the Farmington that flow through primarily private lands and for which no federal land acquisition or land management are envisioned, the National Park Service has identified several specific factors upon which those two evaluations should be based: (1) the ***adequacy of existing protection measures*** *to conserve the river's outstanding resources without the need for federal land acquisition and land management; (2)* ***the strength of support*** *for river protection and national designation; (3) whether there is an existing or proposed* ***management framework*** *that will bring the key river interests together to work toward the ongoing protection of the river; and (4) the* ***effects of designation*** *on other uses of the land and water base, the neighboring communities, etc. These factors are discussed further in* ***Section 8.1: Methodology****.*

In light of several important distinctions between the two study segments (i.e., unique resource values and management issues, varying levels of protection, different levels of public support for designation, etc.), this chapter includes separate suitability analyses for each segment.

The Massachusetts Study Segment was found to be not suitable for federal designation at this time. This finding is based on the need for additional protection for the privately owned shorelands along the river in Otis and Sandisfield, the lack of town meeting votes supporting designation in the Massachusetts study towns, and the lack of a workable management framework for the segment. However, the segment could become suitable for designation if these deficiencies are rectified at some point in the future.

The Connecticut Study Segment was found to be suitable for inclusion in the National Wild and Scenic Rivers System, <u>without the need for any federal land acquisition or land management</u>. This finding is based on the following:

- ***Protection****: The segment is well protected through existing mechanisms, particularly the River Protection Overlay Districts adopted by all four adjacent communities and the high percentage of adjacent public conservation lands;*
- ***Support****: There is broad-based support for designation among the many parties that share an interest in the river's future;*
- ***Management****: The <u>Upper Farmington River Management Plan</u> provides a comprehensive framework for the long-term protection and management of the segment; and*
- ***Effects****: Designation will provide a variety of important benefits, will entail modest costs relative to those benefits, and will not have significant negative effects.*

In addition to those overall findings regarding suitability, the chapter includes three other important findings related to protection and management of the Connecticut Study Segment:

(1) The zoning ordinances — particularly the River Protection Overlay Districts — adopted by the four riverfront towns provide unusually strong and consistent protection for the river and its shorelands. Those ordinances, therefore, satisfy the standards and requirements of Section 6(c) of the Wild and Scenic Rivers Act, which precludes the potential for land condemnation by the federal government in situations where the communities involved have adequate zoning in place to protect the river.

(2) The <u>Upper Farmington River Management Plan</u> satisfies the requirement for a comprehensive management plan contained in Section 3(d) of the Wild and Scenic Rivers Act.

(3) Because the Connecticut Study Segment was found eligible for Wild and Scenic River designation based on the existing flow regime downstream of the Colebrook and Goodwin Dams and Hydroelectric Projects, the continued operation of those facilities is compatible with the protection of the river and with designation.

8.1 Methodology

8.1.1 Protection Mechanisms

The first factor that must be evaluated in the suitability analysis for a private land river such as the Farmington, where federal land acquisition and management are not being considered, is whether there are adequate mechanisms in place to ensure the long-term protection of the river's outstanding values (if those existing mechanisms are complemented by the strong protection from potentially adverse "water resources projects" provided by Wild and Scenic River designation). This evaluation of protection includes several important considerations.

First, because the fundamental protection provided by Wild and Scenic River designation is limited to the prevention of potentially adverse water resources projects (i.e., instream projects affecting water quality, water quantity, or the river's free-flowing condition), the evaluation of protection focuses primarily on mechanisms and characteristics that will ensure compatible management of the lands along the river. These protective mechanisms may include local, state, and federal laws and regulations; land owned by governmental bodies or private organizations that is dedicated for conservation purposes; and either natural limitations (e.g., adjacent wetlands and steep slopes) or man-made features (e.g., roads and railroad corridors) that create physical barriers to shoreland development.

Second, for the river to be found suitable without the need for federal land acquisition or land management, adequate protective measures must be in place prior to designation. This is necessary to demonstrate the ability and commitment of the local, state, and private interests in the river area to manage the river corridor effectively themselves, without federal land acquisition. Such a demonstration before the fact is necessary if the U.S. Congress is to be convinced to provide the strong instream protection available through Wild and Scenic River designation without the traditional option of federal acquisition to protect the river corridor.

Third, in areas such as the Farmington Valley that have a long-standing tradition of local control over land use, the most important conservation measures affecting private lands in the river corridor are the riverfront communities' municipal land use regulations. Because these local ordinances are so fundamental to conserving the corridor and, therefore, to suitability, the evaluations of protection mechanisms presented later in this chapter include town-by-town analyses of the strengths and weaknesses of the municipal regulations.

The evaluations of protection for the two study segments are based on the information contained in **Chapter 4: Resource Management and Protection**, and the Draft Evaluation of Existing Protection (June, 1990), published separately as a companion to this document. The evaluations take into account both the management and protection mechanisms in place at the outset of the Wild and Scenic River Study, and the many additional actions taken by the local communities, state agencies, private organizations, and others over the course of the project.

8.1.2 Support for River Protection and Designation

The second component of the suitability analysis is an examination of the strength of support for river protection and for Wild and Scenic River designation, and the level of commitment to participate in long-term management, among the major river interests (for instance, adjacent communities, state government, elected officials, conservation organizations, regional authorities, and river users). As described in the overview to **Chapter 6: Support for River Protection and Designation**, there are three primary reasons why demonstrations of support are necessary during the study period in private land situations such as the Farmington River Study: (1) they provide evidence that the various interests acknowledge their important roles in the long-term management and protection of the resource; (2) it would be inappropriate and largely ineffective for the federal government to provide the permanent instream protection offered through Wild and Scenic River designation without assurances that the other river interests will do their part to protect the river through their own authorities and abilities; and (3) they ensure that designation is, in fact, desired by the riverfront communities and other parties.

The evaluations of the strength of support for protection and designation of the Massachusetts and Connecticut Study Segments presented later in this chapter are based on the information contained in **Chapter 6**. As indicated in that chapter, the most important indications of support were the town meeting votes that were held in each of the communities along the two segments. Because of the firm commitment made by the National Park Service and the Farmington River Study Committee to respect the local communities' wishes regarding designation, those town meeting votes were the initial benchmark for determining whether adequate support existed to continue working toward designation for each segment.

8.1.3 Management Framework

The third component in the suitability analysis for private land rivers involves evaluating whether there is an adequate management framework (existing or proposed) that will bring the key river interests together to work toward the ongoing protection of the river. On private land rivers, authority over the various aspects of river management usually is shared among many different entities, with no single entity playing a truly dominant role. In such situations, effective long-term management of the river can only be achieved through a cooperative partnership involving all of the major parties with a stake in its future. If the river is designated as a National Wild and Scenic River, the federal government will have

important responsibilities as a member of that partnership. These responsibilities will include, at a minimum, implementing the protections against adverse water resource projects provided by Section 7 of the Wild and Scenic Rivers Act, and could include other functions, such as providing technical and financial assistance. However, for designation to be successful and politically acceptable in these situations, the federal government cannot, and should not, assume the dominant role that has typified most designations over the 25-year history of the Wild and Scenic Rivers System. Consequently, a well-defined management framework involving the key interests must be either in place or ready for implementation following designation before a favorable suitability finding can be rendered.

The evaluation of the management framework for the Connecticut Study Segment presented in **Subsection 8.3.3** is based on the summary of the Upper Farmington River Management Plan contained in **Chapter 7**, as well as the full Management Plan itself, which is printed separately as a companion document to this report.

8.1.4 Effects of Designation

The final element in the suitability analysis is an evaluation of the effects of designation. There are three primary issues to consider in this evaluation:

(1) **Impacts on the Resource Base:** What uses of the associated land and water base would be enhanced, foreclosed, or curtailed with designation? (This question applies to upstream and downstream areas as well as to the specific segment being considered for designation.)

(2) **Costs:** What would the costs of designation be, particularly to local, state, and federal governments?

(3) **Public Benefits:** Would designation provide clearly definable public benefits? Is the protection afforded by designation needed, or are there other ways to protect the river that might be more appropriate? Would designation have any significant negative effects?

8.2 Findings for the Massachusetts Study Segment

Overall, the Massachusetts Study Segment is moderately protected by a combination of existing regulations, public conservation land, and physical limitations to further development of the shorelands. Currently, however, this protection is insufficient for the segment to be found suitable for Wild and Scenic River designation without federal land acquisition and land management.

The 27 percent of the shorelands along the segment that are publicly owned and dedicated for conservation purposes are the best protected part of the river corridor. These public lands have contributed significantly to the continued natural character of the Farmington Valley. On the 73 percent of the shorelands that are privately owned, existing local land use regulations provide considerable protection for the Farmington's water quality, but they afford less protection for the natural integrity of the river corridor. Physical characteristics of the corridor (such as steep slopes, poorly drained soils, adjacent wetlands, and a lack of existing road access) provide a measure of protection from incompatible activities in certain locations. State and federal programs provide substantial protection for the river's water quality, particularly from point source pollution. However, the Farmington River's instream flows and its free-flowing condition are only moderately protected by local, state, and federal regulations and programs in Massachusetts; the river remains vulnerable to projects that could adversely affect those values.

Significant actions were taken during the Wild and Scenic River Study that have strengthened protection of the Massachusetts segment. Two are particularly noteworthy: the Town of Tolland's adoption of a River Protection District, which established a 200-foot buffer area along the river; and the Massachusetts Department of Environmental Management's acquisition of two key riverfront parcels in Otis, totalling 467 acres and more than 8,000 feet of river frontage. These important actions will help to maintain the river's high water quality, protect wildlife habitat, provide recreational access, and preserve the scenic quality of the river corridor.

Nonetheless, the privately owned shorelands areas in Otis and Sandisfield — which together account for nearly 65 percent of the entire frontage along the segment — remain vulnerable to degradation from intensive or incompatible development, excessive vegetation removal, and other threats. Additional protection would be needed in those towns for the river to be suitable for Wild and Scenic River designation without the potential for federal land acquisition and management.

The following town-by-town review of river protection provides a more site-specific analysis to support the general observations made above. The summaries identify the major strengths of protection in each of the study area towns, as well as the vulnerabilities that still exist. The information has been further condensed in a matrix, presented in **Figure 8-1** after the town-by-town review.

Becket

While Becket does not have any frontage directly on the Massachusetts Study Segment, it does contain the headwaters of the river in the area above Hayden Pond. Activities in these wetland areas could have a significant impact on the river's water quality and flood flows if not carefully managed. Becket has adopted ordinances that provide protection for the river and its headwater wetlands, but more specific standards are merited in selected areas.

Strengths of Existing Protection:

- Regulation of activities within 100 feet of the Farmington River or bordering vegetated wetland under the Wetlands Protection Act.
- Town-wide low density zoning (2 acres).
- Floodplain district with building restrictions.
- Subdivision requirement for erosion and sediment control plans and stormwater runoff plans.
- Maximum slope requirement of 5 percent for major subdivision streets and 10 percent for minor subdivision streets.
- Environmental Impact Statements for subdivisions larger than 10 lots.

Vulnerabilities:

- Potential pollution from residential septic facilities.
- Potential impacts on wetlands from adjacent development.
- Lack of paid enforcement staff.

Otis

Otis has the most river frontage on the Massachusetts Study Segment (14.6 miles, or 52 percent of the segment), but the smallest amount of adjacent publicly owned conservation land (1.8 miles, or about 12 percent of the town's overall frontage). This combination makes Otis's land use regulations of particular importance for the protection of the river. The town has taken actions to protect the Farmington, but additional measures are needed to protect the natural integrity of the immediate shorelands.

Strengths of Existing Protection:

- Local "Stream and Pond Protection Bylaw" that requires new septic systems to be set back at least 100 feet from any stream or open water body.
- Regulation of activities within 100 feet of the Farmington River or bordering vegetated wetland under the Wetlands Protection Act.
- Floodplain district with building restrictions.
- Erosion and sediment control / limited stormwater controls.

The Massachusetts Study Segment looking south from the Route 57 bridge in New Boston.

- Lack of existing road access along much of east side of river.
- Steep slopes along lower half of east side of river.

Vulnerabilities:

- Most of river frontage (more than 87 percent) in town is privately owned, with many large lots. If these lots are developed without regard for the protection of the river, its natural, scenic and ecological values could be seriously degraded.
- Potential encroachments on the river's 100-year floodplain.
- Potential impacts on water quality from old septic systems, building on steep slopes, sand and gravel extraction, salt runoff and hazardous waste spills on Route 8.
- Potential impacts on water quality and aesthetic values of river corridor from intensive logging.
- Lack of paid enforcement staff.

Sandisfield

The Farmington River in Sandisfield is protected by the large amount of public frontage and adjacent steep slopes in the town, and by the limited potential for further subdivision of riverfront land. However, Sandisfield's regulations provide only a limited amount of formal protection for the river.

Strengths of Existing Protection:

- 39 percent (3.3 miles) of the Town's river frontage in public conservation ownership.
- Very steep slopes (greater than 25 percent) along more than one-third of the Town's river frontage.
- New septic facilities required to be set back at least 100 feet from river.
- Regulation of activities within 100 feet of the Farmington River or bordering vegetated wetland under the Wetlands Protection Act.
- Floodplain district with building restrictions.
- Sand and gravel removal and logging require special permits.

Vulnerabilities:

- Potential impacts on water quality from old septic systems, underground oil tanks, building and logging on steep slopes, salt runoff and hazardous waste spills on Route 8.
- Limited potential for encroachment on the river's 100-year floodplain.
- Limited potential for degradation of the river's natural, scenic and ecological character from riverfront development.
- Lack of paid enforcement staff.

Tolland

Tolland's 4.7 miles of river frontage encompass the most pristine and best protected lands along the Massachusetts Study Segment. No roads parallel the river and no buildings exist in close proximity to it. A high percentage of public land and steep slopes severely limit the potential for development of the shorelands or nearby uplands. Moreover, with the passage of its "River Protection District" in 1991 and other local bylaws, Tolland has established by far the strongest regulatory protection for the river of any of the Massachusetts study towns.

Strengths of Existing Protection:

- 51 percent (2.4 miles) of the Town's river frontage in public conservation ownership.
- "River Protection District," which establishes a 200-foot setback (or the 100-year floodplain, if greater than 200 feet) for new structures and sand and gravel removal, a 150-foot setback for new septic systems, a 50-foot "no cut" zone (within which no trees or other vegetation may be removed), and a limitation on cutting within 50 - 200 feet of not more than 50 percent of existing basal area in a twenty-five year period.
- Very steep slopes along much of frontage.
- Lack of road access.
- Town-wide low density (2-acre) zoning.
- Regulation of activities within 100 feet of the Farmington River or bordering vegetated wetland under the Wetlands Protection Act.
- Strong subdivision regulations requiring erosion and sedimentation control, stormwater control, a 10 percent open space requirement for recreational use, and "Development Impact Statements."

Vulnerabilities:

- Lack of paid enforcement staff.
- No other major vulnerabilities were identified, provided that the Town's existing regulations are retained and are well-enforced.

FIGURE 8-1
Town-by-Town Comparison of Protection for the Massachusetts Study Segment

Town	Total River Front. (mi.)	Adjacent Public Conservation Lands		Local Land Use Regulations											Physical Limits to Develop.
		River Frontage (miles/%)	Acres	River Protect. District	Wetland Buffer	Septic Set-back	Flood-plain Regs.	Min. Lot Size	Site Plan	*Subdivision Regulations*					
										Subdiv. Lan-guage	Max. Slope	Open Space	E&S	Storm-water	
Becket	0.0	N/A	N/A	N/A	100′	50′	Min. (NFIP)	2 acres	No	No	5%-10% Roads	No	Good	Good	Few (Adjacent wet-lands)
Otis	14.6	1.80 (12%)	469	No	100′	100′	Min. (NFIP)	1 acre	No	Yes	No	No	Some	Some	Some (Steep slopes; lack of access)
Sandisfield	8.6	3.29 (39%)	1603	No	100′	100′	Min. (NFIP)	1 acre	No	No	6%-12% Roads	No	Some	Some	Some (Steep slopes; limited room for add't'l develop.)
Tolland	4.7	2.41 (51%)	998	Yes (200′)	100′	150′	Strong (RPD)	2 acres	Yes	Yes	8% Roads	Yes-10%	Good	Good	Many (Steep slopes; lack of access; limited room for add. dev)

KEY FOR FIGURE 8-1

Total River Frontage
Total number of miles of river frontage along both sides of the Study Segment within each town. Mileage estimates based on tax assessor maps of each town.

Adjacent Public Conservation Lands
Includes mileage and acreage of public lands (town, state, MDC, and federal) along the Study Segment that are managed specifically for conservation purposes. The percentages shown are of the public frontage in each town relative to the total frontage in that town, not to the entire Study Segment.

River Protection District
Indicates whether the town has adopted a River Protection Overlay District, and if so, what area the District covers. These Districts include setbacks for new buildings, septic systems, and sand and gravel extraction, and restrictions on vegetation removal within the boundary.

Wetland Buffer
Indicates the area adjacent to the river within which the jurisdiction of the Wetlands Protection Act is applied.

Septic Setback
Indicates the minimum distance from the river that new septic facilities must be set back. An asterisk indicates that the setback is incorporated in the town's River Protection District.

Floodplain Regulations
Refers to the level of regulation applied to the river's 100-year floodplain. "Minimum (NFIP)" means that the town has adopted the minimum standards of the National Flood Insurance Program. "Strong (RPD)" means that the floodplain is protected through the town's River Protection Overlay District.

Minimum Lot Size
Refers to the minimum lot size requirements for the development of land abutting the river.

Site Plan
A "yes" here means that the town requires site plan review of a number of "special permit" land uses (usually business and commercial uses). Site plan review allows a planning board to inspect and potentially modify site-specific locations of buildings and facilities.

Subdivision Language
A "yes" here means that the town's subdivision regulations provide specific language and standards for the protection of river-related resources. Statements such as "due regard shall be shown for all natural features" (including streams) are considered general language and would receive a "no" in this category.

Maximum Slope
Indicates a requirement that roads, driveways, and/or buildings may not be constructed on slopes steeper than the specified grade.

Open Space
Indicates whether a specified percentage of the overall land in a subdivision must be retained as open space. If open space "may" be required, a "no" appears in the table.

E&S
Refers to the level of specificity of erosion and sedimentation control measures required in subdivision plans.

Stormwater
Refers to the level of specificity required in subdivision plans for controlling stormwater runoff.

Note: Much of the information presented in Figure 8-1 is derived from the 1990 Draft Evaluation of Existing Protection. That information has been updated wherever possible to reflect actions taken during the course of the Wild and Scenic River Study (such as Tolland's adoption of a local River Protection Overlay District and the acquisition of riverfront parcels by the Massachusetts Department of Environmental Management).

8.2.2 Support for River Protection and Designation

As described in **Chapter 6**, the Towns of Otis, Sandisfield, and Tolland voted at special town meetings during the winter of 1992 to rescind their earlier support for Wild and Scenic River designation. The Town of Otis voted further at the same town meeting to officially oppose designation. In light of those votes, there is insufficient support for the Massachusetts segment to be found suitable for designation at this time.

Also, in contrast to Tolland's adoption of a River Protection District, neither Otis nor Sandisfield implemented additional river conservation measures during the study. As described in the previous section of this chapter, the river remains vulnerable to degradation from inappropriate land uses in those towns. Thus, the two towns have not yet demonstrated a sufficiently strong commitment to protect the river to warrant federal designation.

There is, nonetheless, clear evidence of support for protecting the river at many levels in Massachusetts. Locally, the support appears strongest in Sandisfield, where a group of local residents known as the Sandisfield Citizens Association has organized river cleanups, a public education campaign, and other efforts. At the state level, the Department of Environmental Management has taken strong action to better protect the Farmington by acquiring two important riparian parcels (as described in the previous subsection), and has expressed clear support for designation on several occasions. The state and federal legislators who represent the Massachusetts part of the Farmington Valley — namely, Congressman John Olver, State Senator Jane Swift, and State Representative Christopher Hodgkins — also indicated strong support for designation, although each acknowledged that s/he would not pursue the issue without the support of the local communities.

8.2.3 Management Framework

At the outset of the Farmington River Study, no formal management framework existed that would bring the key river interests along the Massachusetts Study Segment together to work cooperatively to protect the river over time. And because of the lack of local support for designation that evolved in the Massachusetts towns, the study participants chose not to invest the time, energy, and resources that would have been necessary to develop a comprehensive management plan for the Massachusetts segment during the project. Therefore, a management framework for that segment that would be sufficient to meet the requirements for suitability for Wild and Scenic River designation does not exist at this time.

However, the management structure established for the Connecticut segment in the Upper Farmington River Management Plan could be readily amended to incorporate the Massachusetts segment, should the communities choose to pursue designation at some point in the future. The "Resource Management" section of the Plan can serve as a detailed model of the types of resource protection standards and actions to which the towns and the state would need to commit in order to meet the requirements for designation. Moreover, the "Wild and Scenic River Provisions" articulated in the Plan provide a clear, black-and-white explanation of how designation would be implemented, which could help to alleviate the concerns that arose in 1992. Further, the existing Plan includes provisions for how Massachusetts interests can become full members of the Farmington River Coordinating Committee, and the management agreements called for in the Plan could be readily expanded to incorporate the upstream parties.

8.2.4 Effects of Designation

In light of the insufficiencies described above with respect to existing protection, support for designation, and a management framework, a detailed analysis of the effects of designation of the Massachusetts segment has not been conducted. In general, however, it is likely that designation of the Massachusetts segment would have effects comparable to those projected to result from designation of the Connecticut segment, as described later in this chapter. Designation would be expected to have beneficial effects on the biological, hydrological, recreational, and aesthetic values of the river itself by ensuring that no new dams or other major adverse water resources projects would be located on the segment. With respect to land use and ownership, if the Massachusetts towns and the State pursued a similar approach to designation as was used in Connecticut, no changes in the existing situation would occur as a result of designation: land use would continue to be managed in accordance with relevant local and state regulations; federal land acquisition and land management would be precluded. Costs to the towns and the State of managing the river and its adjacent lands after designation likely would be similar to those under existing conditions.

Refer to **Subsection 8.3.4: Effects of Designation** for the Connecticut Study Segment for further insight into the kinds of effects designation of the Massachusetts segment might have. That subsection also includes a discussion of the effects designation of the Connecticut segment is likely to have on the Massachusetts portion of the study area.

8.2.5 Conclusion

The Massachusetts Study Segment is not suitable for designation at this time for the following reasons:

- Existing regulations, programs, and other measures do not fully protect the natural integrity of the river's immediate shorelands;
- The three communities (Otis, Sandisfield, and Tolland) that directly abut the segment have not passed town meeting votes supporting Wild and Scenic River designation; and

➢ No formal management framework currently exists that would bring the major parties with an interest in the Massachusetts segment together to work cooperatively for its long-term protection and management.

However, the segment could become suitable if: (1) additional measures are implemented to better protect the shorelands in Otis and Sandisfield (either through the adoption of new local zoning bylaws in those towns or through the establishment of a statewide shorelands protection program, such as the proposed "Massachusetts River Protection Act" that has been under consideration by the state legislature in recent years), (2) the communities pass town meeting votes supporting designation, and (3) a management framework comparable to the Upper Farmington River Management Plan is adopted by the Massachusetts towns and the State.[43]

8.3 Findings for the Connecticut Study Segment

8.3.1 Protection Mechanisms

The Connecticut Study Segment is well protected through a combination of unusually strong local land use regulations, a high percentage of adjacent public conservation lands, important state and federal programs, and physical characteristics of the river corridor that serve to limit development potential in several important areas. Together, these existing mechanisms provide sufficient protection for the segment to be found suitable for Wild and Scenic River designation without the need for federal land acquisition or land management.

With respect to land management, the segment receives strong protection from the extensive public lands located along it that are specifically dedicated for conservation purposes. These lands, which cover approximately **48.5 percent** of the segment's frontage and significant upland acreage as well, are the best protected part of the river corridor from development or intensive uses. The public conservation lands are vital to the river's long-term health and for maintaining the natural values and rural character of the upper Farmington Valley.

The remaining 51.5 percent of the shorelands that are privately owned are also well protected, primarily through the exemplary actions taken by the adjacent communities to ensure the compatible management of those lands. As described in **Chapter 4: Resource Management and Protection** and the Draft Evaluation of Existing Protection, the four towns along the segment have implemented a variety of programs for many years that have helped to protect the river and its surrounding lands. These include ordinances regulating wetland disturbance, building in floodplain areas, septic system installation, density and type of development, subdivisions, erosion and sedimentation control, sand and gravel extraction, and forestry practices. However, the abutting towns' most important contribution to protecting the river are clearly the "River Protection Overlay Districts" that each adopted during the study period. These ordinances prohibit new structures, new septic systems, and sand and gravel operations within a 100-foot buffer on both sides of the river for the entire length of the segment, and establish strict limitations on vegetation removal within that buffer. By conserving the natural integrity of the river's shorelands through the protection of natural vegetation and the elimination of most forms of new development, the River Protection Overlay Districts provide effective protection for the Farmington River's biological, scenic, and recreational resources.

In light of the strong, consistent protection they provide to the Connecticut Study Segment, the local zoning ordinances — particularly the River Protection Overlay Districts — adopted by the Towns of Hartland, Barkhamsted, New Hartford and Canton satisfy the standards and requirements of Section 6(c) of the Wild and Scenic Rivers Act. These ordinances are fully consistent with the purposes of the Act, and make federal land acquisition and land management unnecessary to maintain the integrity of the river's adjacent lands. As a result, it is appropriate for the provisions of Section 6(c), which preclude the use of federal land condemnation in situations where adequate local zoning is in force, to be applied to the Connecticut Study Segment.

In addition to the significant protection provided by adjacent public conservation lands and strong local land use regulations, the Connecticut segment receives important protection through several state and federal programs. In particular, the river's water quality is well protected by the Connecticut Department of Environmental Protection's implementation of state and federal water pollution control statutes. This protection was given added strength with the adoption of the Upper Farmington River Management Plan, in which the DEP committed to a prohibition of any new point source discharges from sewage treatment plants or industrial sites into the segment or its tributaries.[44] This is among the strictest standards for water quality protection that the DEP has applied to any river in the state.

The segment's water quantity/instream flows also received a substantial measure of additional protection with the completion of the Management Plan. The standards for water quantity incorporated in the Plan ensure that if any changes are made to the existing flow regime, sufficient flows will be maintained to sustain the river's outstanding fish, wildlife, and recreation resources, as well as its scenic values.

[43] Should there be renewed interest in designation of the Massachusetts segment, it would be preferable if the entire stretch were included. However, it would be possible to obtain designation for only a portion of the segment; for example, the section in Tolland and Sandisfield could be designated by itself if those two towns should desire such action.

[44] Implementation of this standard may require changes in Connecticut's Water Quality Standards, including the anti-degradation standard, and in state statute.

The following town-by-town review of river protection provides a more site-specific analysis to support the general observations made above. The summaries identify the major strengths of protection and any remaining vulnerabilities in each of the study area towns. The information has been further condensed in a matrix, presented in **Figure 8-2** following the town-by-town review.

Colebrook

Although Colebrook does not have any frontage directly on the Connecticut Study Segment, is does encompass important tributaries to the West Branch (particularly the Sandy Brook/Still River system). These tributaries are generally well protected from water quality degradation by Colebrook's existing land use regulations.

Strengths of Existing Protection:

- Inland Wetlands Commission jurisdiction increased to 75 feet from rivers and streams.
- "Streambelt Corridor," within which Inland Wetlands Commission jurisdiction is increased by varying distances from rivers to include all soils which are poor filters for sediment runoff and waste assimilation.
- Floodplain district with building restrictions.
- Erosion and sediment controls; limited stormwater controls.
- Sand and gravel regulations.
- Low density zoning (2 acres).
- Maximum slope requirements of 6 percent for subdivision collector streets and 10 percent for local streets and driveways.

Vulnerabilities:

- Potential impacts from unmanaged releases of stormwater.
- Potential water quality impacts from building on steep slopes and from existing or new septic facilities.

Hartland

Hartland's river frontage represents some of the most undeveloped land on the Connecticut segment. A high percentage of public frontage, strong local land use regulations, a lack of road access to the river's west side, and a local road buffer on the river's east side combine to provide substantial protection for the Farmington's natural integrity and water quality in Hartland.

Strengths of Existing Protection:

- 70 percent (2.3 miles) of the Town's river frontage in public conservation ownership (including two parcels totalling 123 acres and roughly 3,000 feet of frontage acquired by the Connecticut DEP during the study).
- "River Protection Overlay District," which prohibits new structures, new septic systems, and sand and gravel extraction within 100 feet of the river, and strictly limits vegetation removal within that distance.
- Inland Wetlands Commission jurisdiction increased to 150 feet from the river.
- Prohibition on building in the 100-year floodplain.
- Low density zoning (2 acres).
- Physical limitations to development (specifically, steep slopes and a lack of road access along most of the west side, and a local road buffer along the entire east side).
- Erosion and sediment control.
- Maximum slope requirement of 10 percent for subdivision roads.
- Paid enforcement officials (Planning & Zoning; Inland Wetlands; Town Health Officer (FVHD); Building Inspector).

Vulnerabilities:

No major vulnerabilities were identified, provided that the Town's existing regulations are retained and are well-enforced.

Barkhamsted

Barkhamsted has the most frontage of any of the towns along the Connecticut Study Segment (12 miles, or 45 percent of the total frontage along the segment), and encompasses some of the least developed lands in the study area. The combination of a high percentage of adjacent public land, solid local land use regulations, and very limited potential for additional development provide strong protection for this important section of the river.

Strengths of Existing Protection:

- 62 percent (7.4 miles) of the Town's river frontage in public conservation ownership.
- "River Protection Overlay District," which prohibits new structures, new septic systems, and sand and gravel extraction within 100 feet of the river, and strictly limits vegetation removal within that distance.

- "Streambelt Corridor," within which Inland Wetlands Commission jurisdiction is increased to between 50 - 200 feet from the river, depending on soil types.
- Floodplain district with building restrictions.
- Erosion and sediment controls; stormwater management.
- Supplemental sand and gravel regulations.
- Paid enforcement officials (Planning & Zoning; Inland Wetlands; Town Health Officer (FVHD); Building Inspector).

Vulnerabilities:

No major vulnerabilities were identified, provided that the Town's existing regulations are retained and are well-enforced.

New Hartford

New Hartford encompasses 10 miles, or about 38 percent, of the frontage on the Connecticut segment, and includes the largest town center in the study area. As in Barkhamsted, the combination of adjacent public conservation lands, effective local land use regulations, and limited potential for additional development provide strong protection for the Farmington as it flows through New Hartford.

Strengths of Existing Protection:

- 31 percent (3.1 miles) of the Town's river frontage in public conservation ownership.
- "River Protection Overlay District," which prohibits new structures, new septic systems, and sand and gravel extraction within 100 feet of the river, and strictly limits vegetation removal within that distance.
- Inland Wetlands Commission jurisdiction increased to 100 feet from the river.
- Floodplain district with building restrictions.
- Erosion and sediment controls; stormwater controls.
- Supplemental sand and gravel regulations.
- Site plan review for most activities.
- Reduced tax assessment for "open space" areas through Public Act 490.
- Paid enforcement officials (Planning & Zoning; Inland Wetlands; Town Health Officer (FVHD); Building Inspector).

Vulnerabilities:

No major vulnerabilities were identified, provided that the Town's existing regulations are retained and are well-enforced.

Canton

Canton's short stretch of frontage (1.16 miles) on the Connecticut segment represents an important scenic section of the river. The Town has adopted strong land use regulations that effectively protect the river, and the potential for new development of the Farmington's shorelands in the area is further limited by the fact that 76 percent of the privately owned riverfront lots have already been developed.

Strengths of Existing Protection:

- "River Protection Overlay District," which prohibits new structures, new septic systems, and sand and gravel extraction within 100 feet of the river, and strictly limits vegetation removal within that distance. (Canton's District extends along the entire length of the Farmington River in the Town, much of which is located downstream of the boundary of the Connecticut Study Segment.)
- Inland Wetlands Commission jurisdiction increased to 200 feet from the river. (This represents the largest regulated wetland buffer of any of the Connecticut study towns.)
- Floodplain district with building restrictions.
- Erosion and sediment controls; stormwater management.
- Supplemental sand and gravel regulations.
- Reduced tax assessment for "open space" areas through Public Act 490, which protects two important parcels on the river.
- Open space buffers can be required in subdivisions and can be tailored to protect important natural resources such as the river.

Vulnerabilities:

- Only 2 percent (0.03 miles) of the Town's river frontage is publicly owned for conservation purposes. However, the Town's strong land use regulations provide adequate protection, provided they are retained and are well-enforced.

FIGURE 8-2
Town-by-Town Comparison of Protection for the Connecticut Study Segment

Town	Total River Front. (mi.)	Adjacent Public Conservation Lands		Local Land Use Regulations											Physical Limits to Develop.
		River Frontage (miles/%)	Acres	River Protect. District	Wetland Buffer	Septic Set-back	Flood-plain Regs.	Min. Lot Size	Site Plan	*Subdivision Regulations*					
										Subdiv. Lan-guage	Max. Slope	Open Space	E&S	Storm-water	
Colebrook	0.0	N/A	N/A	N/A	75'+	50'	Min. (NFIP)	2 acres; 1 acre	Yes	No	6%-10% Roads	No	Good	Some	Few (Steep slopes)
Hartland	3.3	2.3 (70%)	597	Yes (100')	150'	100'*	Strong (NFIP & RPD)	2 acres	Some	Yes	10% Roads	No	Good	Some	Some (Lack of access on west side)
Barkham-sted	12.0	7.4 (62%)	3703	Yes (100')	50'-200'	100'*	Strong (NFIP & RPD)	Variable (1 acre; 2 acres; No min.)	Yes	Yes	12% Drive-ways	No	Good	Good	Some (Limited room for add't'l develop.)
New Hartford	10.0	3.1 (31%)	1392	Yes (100')	100'	100'*	Strong (NFIP & RPD)	Variable (from 2 acres - 10,000 ft^2	Yes	No	10% Roads	No	Good	Some	Some (Limited room for add't'l develop.)
Canton	1.16	0.03 (2%)	2	Yes (100')	200'	100'*	Strong (NFIP & RPD)	1 acre	Yes	No	15% Drive-ways; 30% Bldgs.	No	Good	Good	Some (Limited room for add't'l develop.)

KEY FOR FIGURE 8-2

Total River Frontage
Total number of miles of river frontage along both sides of the Study Segment within each town. Mileage estimates based on tax assessor maps of each town.

Adjacent Public Conservation Lands
Includes mileage and acreage of public lands (town, state, and MDC) along the Study Segment that are managed specifically for conservation purposes. The percentages shown are of the public frontage in each town relative to the total frontage in that town, not to the entire Study Segment.

River Protection District
Indicates whether the town has adopted a River Protection Overlay District, and if so, what area the District covers. These Districts include setbacks for new buildings, septic systems, and sand and gravel extraction, and restrictions on vegetation removal within the boundary.

Wetland Buffer
Indicates the area adjacent to the river within which the jurisdiction of the Inland Wetlands and Watercourses Act is applied.

Septic Setback
Indicates the minimum distance from the river that new septic facilities must be set back. An asterisk indicates that the setback is incorporated in the town's River Protection District.

Floodplain Regulations
Refers to the level of regulation applied to the river's 100-year floodplain. "Minimum (NFIP)" means that the town has adopted the minimum standards of the National Flood Insurance Program. "Strong (NFIP & RPD)" means that the floodplain is protected through the town's adoption of both the minimum NFIP standards and a local River Protection Overlay District.

Minimum Lot Size
Refers to the minimum lot size requirements for the development of land abutting the river.

Site Plan
A "yes" here means that the town requires site plan review of a number of "special permit" land uses (usually business and commercial uses). "Some" indicates that fewer land uses are subject to site plan review. Site plan review allows a planning and zoning commission to inspect and potentially modify site-specific locations of buildings and facilities.

Subdivision Language
A "yes" here means that the town's subdivision regulations provide specific language and standards for the protection of river-related resources. Statements such as "due regard shall be shown for all natural features" (including streams) are considered general language and would receive a "no" in this category.

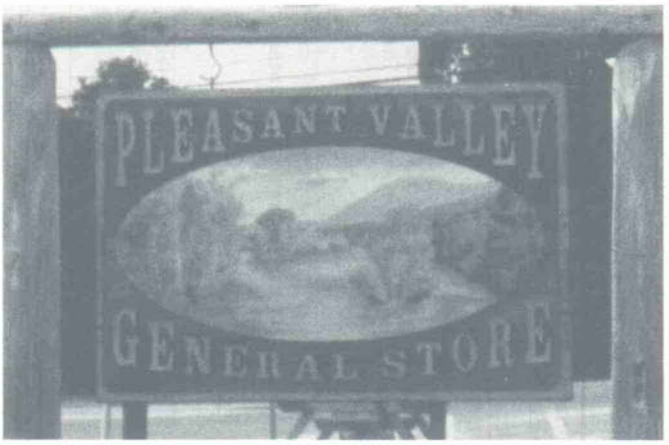
Maximum Slope
Indicates a requirement that roads, driveways, and/or buildings may not be constructed on slopes steeper than the specified grade.

Open Space
Indicates whether a specified percentage of the overall land in a subdivision must be retained as open space. If open space "may" be required, a "no" appears in the table.

E&S
Refers to the level of specificity of erosion and sedimentation control measures required in subdivision plans.

Stormwater
Refers to the level of specificity required in subdivision plans for controlling stormwater runoff.

Note: Much of the information presented in Figure 8-2 is derived from the 1990 Draft Evaluation of Existing Protection. That information has been updated wherever possible to reflect actions taken during the course of the Wild and Scenic River Study (such as the adoption of local River Protection Overlay Districts and the acquisition of riverfront parcels by the Connecticut Department of Environmental Protection).



The Farmington River is a defining feature of the towns through which it flows, as shown by this sign in Barkhamsted depicting a nearby river scene.

8.3.2 Support for River Protection and Designation

As described in **Chapter 6**, there is strong, across-the-board support among the major parties involved in management of the Connecticut Study Segment, both for river protection in general and for Wild and Scenic River designation in particular. The strength and breadth of support that has been demonstrated is clearly sufficient to find the Connecticut segment suitable for Wild and Scenic River designation.

At the local level, the most direct indications of support were the overwhelming votes in favor of Wild and Scenic River designation at formal town meetings in all five of the Connecticut study towns in 1990 and 1991. This degree of local support for designation is unprecedented for a private land river involving several or more communities.

In addition, the four towns abutting the segment demonstrated a clear commitment to protect the Farmington by taking substantial actions to accomplish that goal during the study. The most important of those actions were the towns' adoption of the River Protection Overlay Districts referenced in the previous section, which provide consistent protection to the shorelands along the entire segment. Those actions are particularly noteworthy because achieving uniformly strong regulatory protection of a shared resource by several adjacent communities is extremely unusual. It is also important to note that when the Draft Evaluation of Existing Protection was completed in 1990, the shorelands along the Connecticut Study Segment were determined to be vulnerable to activities that could have degraded the river's natural integrity and scenic character. That finding, in part, spurred the four towns along the segment to consider additional measures to provide stronger protection to the river. The River Protection Overlay Districts subsequently adopted by those communities effectively eliminated the major vulnerabilities identified in the 1990 report. This direct local response to the Farmington's potential vulnerability is a tangible indication of the strong sense of stewardship for the river that exists in the study towns.

As described in **Chapter 6**, a clear consensus of support for river protection and designation also emerged among the other major interests involved in river management by the time the Upper Farmington River Management Plan was completed in the spring of 1993. The State of Connecticut, the Metropolitan District Commission, the Farmington River Watershed Association, the respective state and federal legislators, and many other organizations expressed their support for designation in public testimony and/or in writing. In addition, several of those parties demonstrated their commitment to protect the Farmington by implementing tangible conservation actions during the study period.

The unanimity of support among the key river interests at the study's conclusion is a striking contrast to the atmosphere that existed at the beginning of the project, and reflects a consensus rarely achieved in past efforts to designate private land rivers into the national system.

8.3.3 Management Framework

The Upper Farmington River Management Plan, adopted by a unanimous vote of the Farmington River Study Committee on April 29, 1993, establishes a clearly defined and workable framework that will bring the major river interests together to work for the long-term protection of the Connecticut Study Segment. As summarized in **Chapter 7**, the Plan identifies strong, detailed standards for resource protection, and identifies a range of actions that will be used to achieve those standards. Indeed, many of these actions have already been implemented by the riverfront towns, the State, private organizations, and others. The Plan also establishes an administrative structure to ensure its implementation. That structure focuses on the creation of a new entity — the Farmington River Coordinating Committee — to build upon the successes of its predecessor, the Study Committee. The FRCC is designed to stimulate continued cooperation and coordination among the major players in river management, and to provide a forum for all river interests to discuss and resolve issues.

The Plan encompasses a strong package of protection and is truly comprehensive in scope. Although a river management plan traditionally is not prepared until after Wild and Scenic River designation, the Upper Farmington River Management Plan serves all the same functions as the typical post-designation plan, and provides comparable protection. Therefore, the Plan satisfies the requirement of Section 3(d) of the Wild and Scenic Rivers Act for the preparation of a comprehensive management plan.

In light of its comprehensiveness and the fact that it has been approved by all of the major parties responsible for its implementation, the Upper Farmington River Management Plan fulfills the third component of suitability for private land rivers. More broadly, the fact that the successful completion of the Management Plan during the study provided the foundation for a consensus of support for designation on the

Farmington suggests that this approach may provide a constructive model for future efforts to protect private land rivers.

8.3.4 Effects of Designation

Impacts on the Resource Base

Land Resources

Designation itself will have no effect on the existing patterns of land use and ownership along the Connecticut Study Segment. Private lands will remain private (unless the owner of any given parcel should choose to sell or give it to a town or the State), and will continue to be managed in accordance with existing local, state, and federal regulations and programs. Existing public lands will continue to be managed by the relevant agencies. The primary responsibility for protecting important land-based resources associated with the river (e.g., adjacent wildlife habitat, scenic areas within the corridor or the broader viewshed) will rest with private and public landowners and the local governments.

With regard to property values along the river, designation is likely to have either no effect or a modest positive effect. Studies and anecdotal evidence from other Wild and Scenic Rivers and areas with similar conservation designations indicate that the value of property adjacent to formally protected resources tends to increase relative to that of comparable parcels in unprotected areas. This trend is expected to be manifested along the Farmington River for two primary reasons: first, designation will be a major factor in ensuring that the river retains its present qualities; and second, no other river in the State of Connecticut has received the protection and recognition afforded by Wild and Scenic River designation.

It is possible that the recognition associated with designation could result in increased recreational pressure on the river. This, in turn, could have related impacts on the river's shorelands (degraded access sites, trespass, litter, parking shortages, etc.). However, other rivers — such as the Wildcat River in Jackson, New Hampshire — have seen little or no increase in recreational activity following designation, at least in part because the local interests chose not to widely publicize the designation. Also, informal evidence from recent years on the Farmington (and many other rivers) suggests that recreational use has been increasing already, independent of federal designation.

Ultimately, the cause of any increased recreational activity that may occur will be irrelevant; what will matter will be how that increased pressure is managed. In this context, designation should have a positive effect for the river and its adjacent lands because it will institutionalize the Upper Farmington River Management Plan and the Farmington River Coordinating Committee created therein. The Management Plan explicitly identifies the development of a comprehensive recreation management plan as a priority for action, and the Coordinating Committee is specifically designed to provide a forum for addressing this type of complicated, multi-jurisdictional issue.

Water Resources

Designation will have significant positive effects on the Connecticut segment's water resources by ensuring the protection of its free-flowing condition, high water quality, instream flows, and the natural integrity of its channel, banks, and adjacent wetlands. The fundamental protection provided by Wild and Scenic River status will prevent new dams or hydroelectric projects located on or directly affecting the segment, as well as any other federally assisted water resource project that would degrade the parameters listed above to such a point that the Farmington River's outstanding fish, wildlife, recreation, and historic resources would be adversely affected. This protection is the strongest available for maintaining instream resources.

While designation will preclude any new federally assisted water resources project that would adversely affect the segment, it is important to note that the existing operations of projects in the study area will not be affected. As described in **Chapter 3: Eligibility and Classification**, the Connecticut Study Segment was found eligible for Wild and Scenic River designation based on the existing flow regime from the Goodwin and Colebrook Dams and Hydroelectric Projects, which are located just upstream of the segment. That flow regime is dictated by a number of legal commitments, as described in **Chapter 4: Resource Management and Protection**. Because the flows provided by the existing management regime are sufficient for eligibility, the continued operation of the Goodwin and Colebrook facilities based on that regime is compatible with the protection of the river and with designation.[45]

The broader issue of water allocation — in particular, trying to balance instream needs with potential needs for consumptive withdrawals for public water supply — is another fundamental issue on the Farmington River that requires attention in an evaluation of the effects of designation. Two points are especially relevant:

(1) Designation itself will not automatically preclude all consumptive withdrawals from the river. However, it will preclude any withdrawal requiring federal assistance (through loans, grants, licenses, or permits) that would adversely affect the Farmington's outstanding

[45] The Upper Farmington River Management Plan specifies that if any changes to the existing flow regime should be proposed, those changes must comply with the Plan's standards for water quantity. Those standards establish specific requirements for maintaining sufficient instream flows to ensure the protection of the river's outstanding resources.

fish, wildlife, and/or recreation resources by reducing flows too severely.

(2) The water quantity standards contained in the Upper Farmington River Management Plan will ensure that if a withdrawal from the West Branch Reservoirs or the river is proposed, sufficient instream flows will be maintained to protect the river's outstanding resources.

As described in **Subsection 5.2.5: Integration**, the results of the Instream Flow Study indicate that it may, indeed, be possible to provide sufficient instream flows to maintain the river's outstanding resources while allowing for a limited withdrawal for water supply, should such a withdrawal prove to be necessary. While this conclusion rests on a number of important assumptions, the potential it created for a "win-win" scenario in balancing water allocation needs proved to be instrumental in forging a consensus for Wild and Scenic River designation. It should be noted that this concept of balancing instream needs with other uses is entirely consistent with the provisions of Section 10(a) of the Wild and Scenic Rivers Act, which states that "each component of the national wild and scenic rivers system shall be administered in such manner as to protect and enhance the values which caused it to be included in said system *without*, insofar as is consistent therewith, *limiting other uses that do not substantially interfere with public use and enjoyment of these values*" (emphasis added).

Outstanding Resources

Designation will have significant positive effects on the Connecticut segment's outstanding fish, wildlife, recreation, and historic resources for two principal reasons:

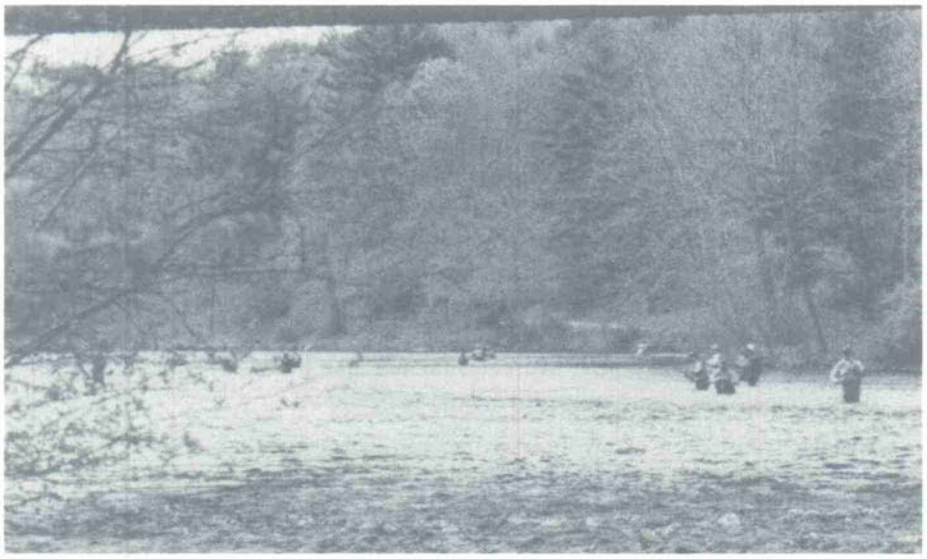
(1) Most directly, designation will preclude new dams, hydroelectric projects, and other federally assisted water resources projects that would impact the river's free-flowing condition or adversely affect any of those outstanding values.

(2) Designation will further institutionalize the Upper Farmington River Management Plan and the Farmington River Coordinating Committee. The Plan includes explicit standards and action programs designed to protect and enhance the river's outstanding resources and to conserve the land and water base upon which they rely. The Coordinating Committee will be the group primarily responsible for organizing the Plan's implementation, and as such will play a crucial role in helping to ensure the protection of the Farmington's outstanding resources. A major part of the Committee's role will be to provide a forum for addressing and promoting the resolution of issues that could result in degradation of those resources.

Upstream Effects

With designation of the Connecticut segment, the National Park Service will be responsible for reviewing any water resource project requiring a federal permit, license, or funding that is proposed upstream of the segment. This would include proposed projects on the Massachusetts segment or its tributaries, as well as projects on direct tributary systems to the Connecticut segment itself (for example, the Still River/Sandy Brook system). Any project that would have an adverse effect on the free-flowing condition or the outstanding resources of the Connecticut segment will, in accordance with the Wild and Scenic Rivers Act, be prohibited. Any project that would reduce either the quality or quantity of water flowing into the designated segment downstream would be of particular concern. Federal agencies that typically have a role in the funding or approval of such projects, notably the U.S. EPA, the Army Corps of Engineers, and the Federal Energy Regulatory Commission, will be apprised of the special status of the Connecticut segment and informed of the requirements of the Wild and Scenic Rivers Act.

While primarily intended to protect the Connecticut segment, these provisions also will provide a measure of protection for the Massachusetts segment and other tributaries from major adverse water resource projects. However, it is important to note that the Massachusetts segment and other upstream areas will remain vulnerable



Wild and Scenic River designation is expected to have significant positive effects for the Farmington's outstanding natural, cultural, and recreational resources. Here, fishermen pursue their quarry at the popular "Church Pool" in Pleasant Valley.

to water resource projects having more localized effects (i.e., not affecting the Connecticut segment), but that nonetheless could result in the significant degradation of river resources in the immediate project area. An example would be a run-of-the-river hydroelectric project on the Massachusetts segment or a tributary, such as that proposed in 1987 on the Fall River in Otis. It is certainly conceivable that this type of project could be constructed without adversely affecting the water quality or quantity flowing into the Connecticut segment, in which case the project would not be precluded by the downstream designation. Such a project could have significant impacts, however, on the river's natural, scenic, and recreational values in the immediate project area.

With respect to land use in upstream areas, designation of the Connecticut segment will have no effect on activities that are not water-related and do not require federal permits or other federal assistance. Private lands upstream of the designated stretch will continue to managed by their owners in accordance with existing local, state, and federal regulations and programs, and public lands in those areas will continue to be managed by the respective agencies in accordance with existing policies.

Downstream Effects

Section 7(a) of the Wild and Scenic Rivers Act specifies that designation shall not "preclude licensing of, or assistance to, developments below...a wild, scenic or recreational river area...which will not invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values" of the designated segment. Thus, in the case of the Farmington River, designation of the upper stretch in Connecticut will affect only two types of possible water resources projects downstream: (1) those that might directly "invade" the designated segment (such as a new dam downstream with a reservoir pool that would inundate the lower part of the segment — a possibility that is, at best, remote); or (2) those that would adversely affect the Farmington River's outstanding anadromous fisheries, including Atlantic salmon and American shad. Should any federally assisted water resource project be proposed downstream that could adversely affect the river's anadromous species, the National Park Service would consult closely with the Connecticut Department of Environmental Protection and the U.S. Fish and Wildlife Service in reviewing the project to ensure the protection of those fisheries resources.

In a more general context, designation of the upstream segment should have beneficial implications for both the river itself and the adjacent communities downstream. Designation and the Upper Farmington River Management Plan will play a major part in ensuring continued flows of high quality water coming from the upstream segment, thereby helping to protect a variety of instream resources in the river downstream. For the downstream towns, those continued flows of high quality water are important because they provide a significant environmental amenity and also will help to maintain the river's capacity to assimilate the communities' wastewater discharges.

Costs

Designation in and of itself is not expected to result in significant new costs to the riverfront towns, the State of Connecticut, or the other major parties in the Farmington Valley. Indeed, limited federal funding to assist the communities, the State, and other parties in implementing the Upper Farmington River Management Plan may become available as a result of designation. In general, the responsibilities and related costs of river management for each of the major interests should be comparable to what they were prior to designation. Parties with membership in the Farmington River Coordinating Committee will need to allocate staff and/or volunteer time to the Committee's activities. However, these efforts would likely need to be expended on Farmington River issues regardless of designation, and therefore should not cause a significant additional burden. In fact, the presence of the FRCC may simplify long-term river management, thus easing financial burdens on individual organizations. In any case, additional expenditures will be at the discretion of each party.

As described in the Management Plan, it is anticipated that the Coordinating Committee will require funding and possibly in-kind assistance to implement the responsibilities identified for it. The Plan specifies that federal funds will be pursued to support the Committee for a start-up period of 3-5 years. The Plan also suggests that longer-term funding needs (e.g., to support the Committee, and for specific projects identified in the Plan) could be met through financial assistance and/or in-kind contributions from several sources, including individuals, foundations, corporations, and government (federal, state, and/or local). Any such assistance would be provided at the discretion of the donating party.

It is estimated that federal appropriations of $50,000 - 100,000 per year will be required during the 3-5 year start-up phase to successfully support the work of the Coordinating Committee and begin implementation of the Management Plan and designation. This total would likely be applied as follows:

* $25,000 - 50,000 for staff support and technical assistance from the National Park Service to the Coordinating Committee, its member institutions, and other interests in the designated area.
* $25,000 - 50,000 for distribution through cooperative agreements to the principal parties involved in river management. These funds would be targeted for specific river management projects.

Annual federal expenditures are expected to decline somewhat once the initial phase of implementation is completed and the Coordinating Committee takes on a greater share of the responsibility for pursuing funding. However, continued

federal funding at least at moderate levels will be required in order for the National Park Service to perform its responsibilities as the primary federal agency involved in implementing the Wild and Scenic Rivers Act and the Upper Farmington River Management Plan.

It is also possible that federal funding may be needed for onetime costs of special initiatives. One such project has already been identified as a high priority for attention: the development of a comprehensive recreation management plan for the segment. Preliminary estimates for this effort range from $50,000 - 100,000. Another possibility that was raised during the study process is the development of an information and interpretive center as a focal point for visitors to the upper Farmington River Valley. This idea was envisioned as a longer-term goal; therefore, cost estimates have not been developed. For these types of large-scale, onetime expenditures, it is expected that funding would be pursued from a number of sources in addition to the federal government.

It is important to note that the potential federal costs outlined above are, in fact, quite modest relative to those incurred by the federal government in other private land river designations. This is a direct result of two crucial elements of the strategy used in the Farmington River Study that differ dramatically from those other situations:

(1) Motivated by the incentive of designation, the towns along the Farmington took strong actions to protect the shorelands prior to designation. As a result, there will be no expensive land acquisition program.

(2) A comprehensive management plan has already been completed. While the preparation of the plan certainly increased the costs and time required to complete the study process, it undoubtedly will result in an overall savings to the federal government by avoiding the costly, time-consuming, and potentially divisive process of preparing a management plan after designation.

Public Benefits

In addition to the significant resource-specific benefits described above under **Impacts on the Resource Base**, there are a number of other advantages that will result from designation of the Connecticut segment. These include the following:

* Ensuring consistency on the part of federal agencies with the Upper Farmington River Management Plan and, thereby, with the clearly expressed desire of the people of the Farmington Valley and beyond to protect the river.

* Institutionalizing the provisions and agreements contained in the Upper Farmington River Management Plan with a strength, energy, and collective will that could not otherwise be achieved.

* Creating an opportunity to leverage financial and other resources for river protection from the federal government, foundations, corporations, and other institutions that might not otherwise target those resources to the Farmington.

* Obtaining recognition as one of the nation's outstanding rivers, which, in addition to its intrinsic value, will contribute to maximizing the three advantages listed immediately above.

With respect to potential negative effects, designation will preclude any opportunity for the development of new dams and hydroelectric facilities on or directly affecting the Connecticut segment, as well as other major water resource projects that would adversely affect the segment's free-flowing character or its outstanding resources. However, no such projects are currently proposed, and no new dams or hydroelectric facilities have been proposed in recent years. While the potential consequences of designation for significant water resource projects should not be ignored, they are outweighed in this instance by the numerous benefits designation will provide and by the widespread support that has been demonstrated for it.

Overall, the protection afforded to the Connecticut segment through Wild and Scenic River designation, and the many benefits associated with it, could not be obtained through other mechanisms. Given that and the fact that it will have only limited negative effects (e.g., on potential hydropower development), designation of the upper Farmington River in Connecticut is clearly in the public interest.

8.3.5 Conclusion

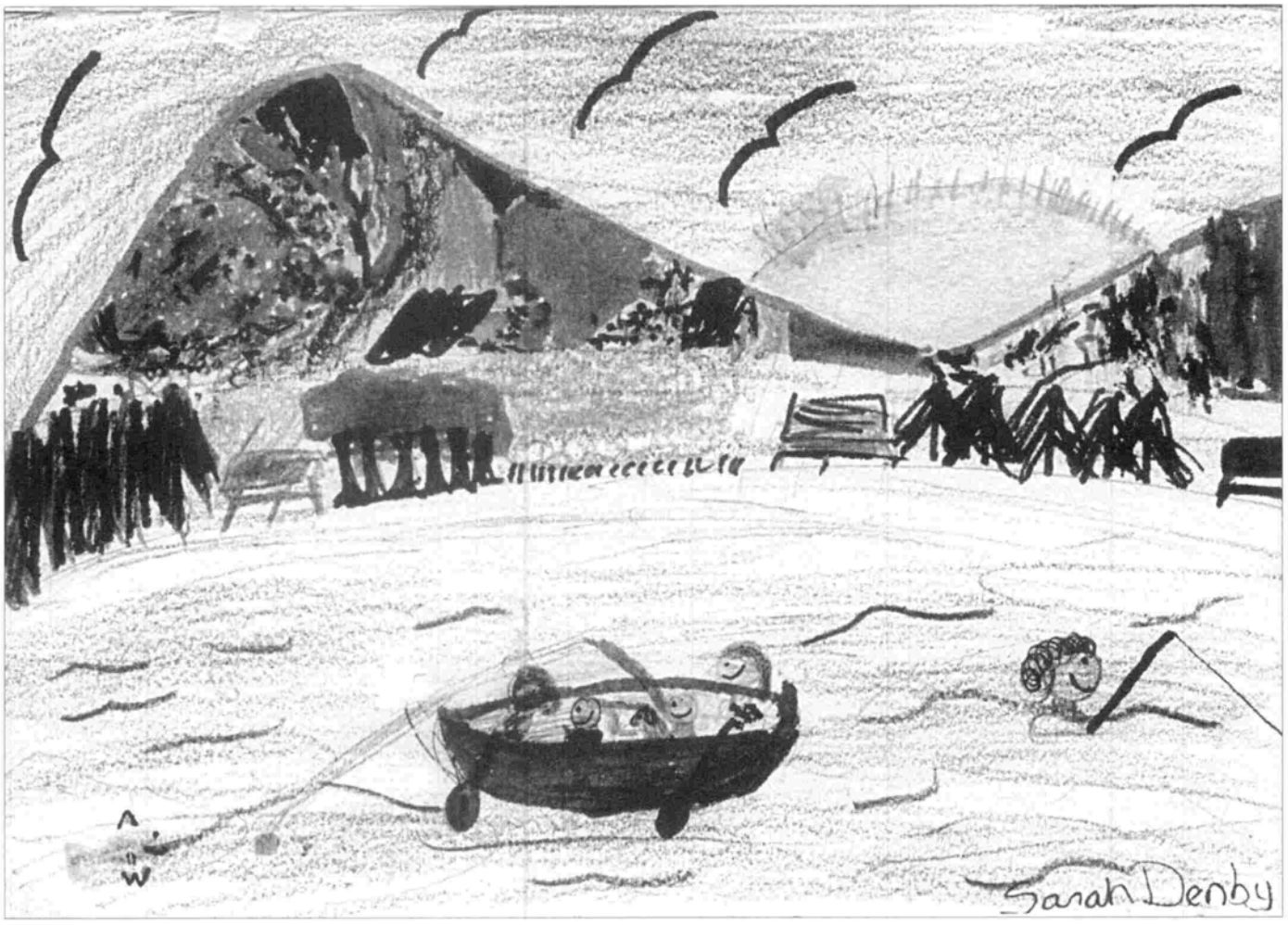
The Connecticut Study Segment is clearly suitable for Wild and Scenic River designation, without the need for any federal land acquisition or land management. This finding is based on the following:

➢ The strength of existing protection, particularly that provided by the local River Protection Overlay Districts and the high percentage of adjacent public conservation lands;

➢ The widespread support for river protection and designation among the many interests involved in river use and management;

➢ The strength and comprehensiveness of the Upper Farmington River Management Plan; and

➢ The likelihood that designation will provide a variety of important benefits, will entail very modest costs relative to those benefits, and will not have significant negative effects.



Chapter 9: Conclusion

I've had lots of fun with the Farmington River. I've gone tubing three times. It's great! It's always cold but fun. I go over it in the school bus every day. We have picnics by the river all the time. I would really like it if my kids could see it too.

Becky Hartley

This chapter recaps the study's major findings on whether the two Farmington River study segments meet the requirements for National Wild and Scenic River designation. It also presents the final recommendations of the Farmington River Study Committee regarding designation of each segment, along with general recommendations regarding future river management.

The Massachusetts Study Segment was found eligible for designation and appropriate for "recreational" classification, but was found to be not suitable for designation at this time. The Study Committee voted unanimously to take no action regarding a recommendation for the designation of the Massachusetts segment.

The Connecticut Study Segment was found eligible for designation and appropriate for "recreational" classification. It also was found suitable for designation without the need for federal land acquisition or land management. Three other important findings related to specific river management issues affecting the Connecticut Study Segment were made; these are presented in the body of the chapter. With respect to the final recommendation of the Farmington River Study Committee, the group voted unanimously to recommend that the Connecticut segment be designated into the national system, with management to be carried out in accordance with the Upper Farmington River Management Plan.

9.1 Massachusetts Study Segment

9.1.1 Summary of Findings

Eligibility

The Massachusetts Study Segment was found to be eligible for designation based on its free-flowing condition and its outstanding resource values. These values include recreation (regionally exemplary white water boating opportunities) and wildlife (regionally exemplary peregrine falcon habitat).

Classification

The segment was determined to be appropriate for "recreational" classification due to the level of human activity/development in the river corridor and the accessibility to the river from adjacent roads and bridge crossings.

Suitability

The Massachusetts Study Segment was found to be not suitable for designation at this time for the following reasons:

- With the exception of Tolland, existing regulations, programs, and other measures do not fully protect the natural integrity of the river's immediate shorelands;
- The three communities (Otis, Sandisfield, and Tolland) that directly abut the segment have not passed town meeting votes supporting Wild and Scenic River designation; and
- No formal management framework currently exists that would bring the major parties with an interest in the Massachusetts segment together to work cooperatively for its long-term protection and management.

The segment could become suitable if these inadequacies are rectified at some point in the future.

9.1.2 Farmington River Study Committee Recommendation on Designation

At its final meeting on April 29, 1993, the Farmington River Study Committee passed by unanimous vote a motion that included the following passage: "...be it resolved...that, in the absence of town votes supporting designation, no action be taken regarding a recommendation for the designation of the Massachusetts section of the river."

9.1.3 Recommendations for future River Management

Although the Farmington River in Massachusetts was not recommended for designation, the Study Committee recommended that the segment should be managed carefully over time both to protect its inherent resources and to prevent negative impacts on the rest of the river downstream. Landowners, local governments, private organizations, and state agencies of the Commonwealth all have important roles to play to ensure that those goals are achieved. The section of the Upper Farmington River Management Plan on "Management of the Massachusetts Segment" includes specific recommendations regarding river management for each of those interests.

The Massachusetts towns should note that while designation of the Connecticut segment will provide a certain measure of protection to the river upstream, the Massachusetts segment nevertheless remains vulnerable to degradation from a variety of potential activities. Therefore, the towns are encouraged to observe implementation of the Management Plan on the Connecticut segment, and to evaluate whether it may, indeed, be possible to develop a proposal for designation of the Massachusetts segment that would be locally acceptable.[46]

[46] The conclusion to the suitability findings for the Massachusetts segment presented in **Subsection 8.2.5** outlines the basic steps that would be required to achieve designation.

Finally, the Massachusetts towns and the State are encouraged to consider active participation on the Farmington River Coordinating Committee at the earliest opportunity, regardless of whether designation of the Massachusetts segment is ever pursued. Such involvement would not require any mandatory actions on the part of the towns or the State; the primary commitment would be limited to the time dedicated by Committee members, and the broadened participation would facilitate more effective management and protection of the shared river resource.

9.2 Connecticut Study Segment

9.2.1 Summary of Findings

Eligibility

The Connecticut Study Segment was found to be eligible for designation based on its free-flowing condition and its outstanding resource values. These values include recreation (a regionally unique combination of recreation opportunities), fish (regionally exemplary habitat for trout and Atlantic salmon), wildlife (regionally unique bald eagle habitat), and historic resources (regionally exemplary historic and archaeological sites).

Classification

The segment was determined to be appropriate for "recreational" classification due to the level of human activity/development in the river corridor and the accessibility to the river from adjacent roads and bridge crossings.

Suitability

The Connecticut Study Segment was found to be suitable for Wild and Scenic River designation, without the need for any federal land acquisition or land management. This finding is based on the following:

- **Protection**: The segment is well protected through existing mechanisms, particularly the River Protection Overlay Districts adopted by all four adjacent communities and the high percentage of adjacent public conservation lands;
- **Support**: There is broad-based support for designation among the many parties involved in river use and management;

Looking upstream from the entrance to Satan's Kingdom. An historical railroad bridge abutment can be seen on the right-hand edge of the photo.

➢ **Management**: The Upper Farmington River Management Plan provides a comprehensive framework for the long-term protection and management of the segment; and

➢ **Effects**: Designation will provide a variety of important benefits, will entail very modest costs relative to those benefits, and will not have significant negative effects.

In addition to the overall suitability finding, the study produced three other important findings related to protection and management of the Connecticut Study Segment:

(1) The zoning ordinances — particularly the River Protection Overlay Districts — adopted by the four riverfront towns provide unusually strong and consistent protection for the river and its shorelands. Those ordinances, therefore, satisfy the standards and requirements of Section 6(c) of the Wild and Scenic Rivers Act, which precludes the potential for land condemnation by the federal government in situations where the communities involved have adequate zoning in place to protect the river.

(2) The Upper Farmington River Management Plan satisfies Section 3(d) of the Wild and Scenic Rivers Act, which requires the preparation of a comprehensive management plan.

(3) Because the Connecticut Study Segment was found eligible for Wild and Scenic River designation based on the existing flow regime downstream of the Colebrook and Goodwin Dams and Hydroelectric Projects, the continued operation of those facilities is compatible with the protection of the river and with designation.

9.2.2 Farmington River Study Committee Recommendation on Designation

At its final meeting on April 29, 1993, the Farmington River Study Committee passed by unanimous vote a motion that included the following passage:

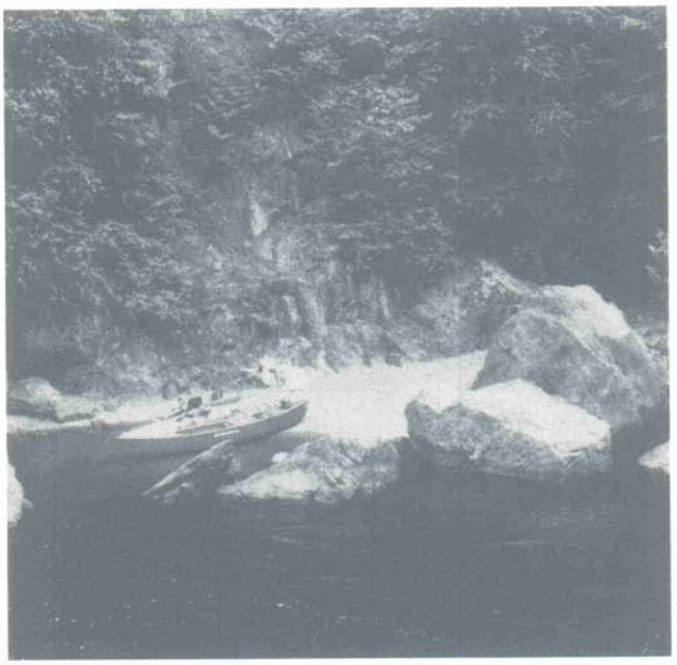
> Be it resolved that: The Farmington River Study Committee recommend to the United States Congress that the Farmington River, from immediately below the Goodwin Dam and Hydroelectric Project in Hartland, Connecticut to the downstream end of the New Hartford/ Canton, Connecticut town line, be designated into the National Wild and Scenic Rivers System in accordance with the spirit and provisions of the Upper Farmington River Management Plan.

9.2.3 Recommendations for future River Management

With designation secured, the most pressing needs for the protection of the Connecticut segment will be:

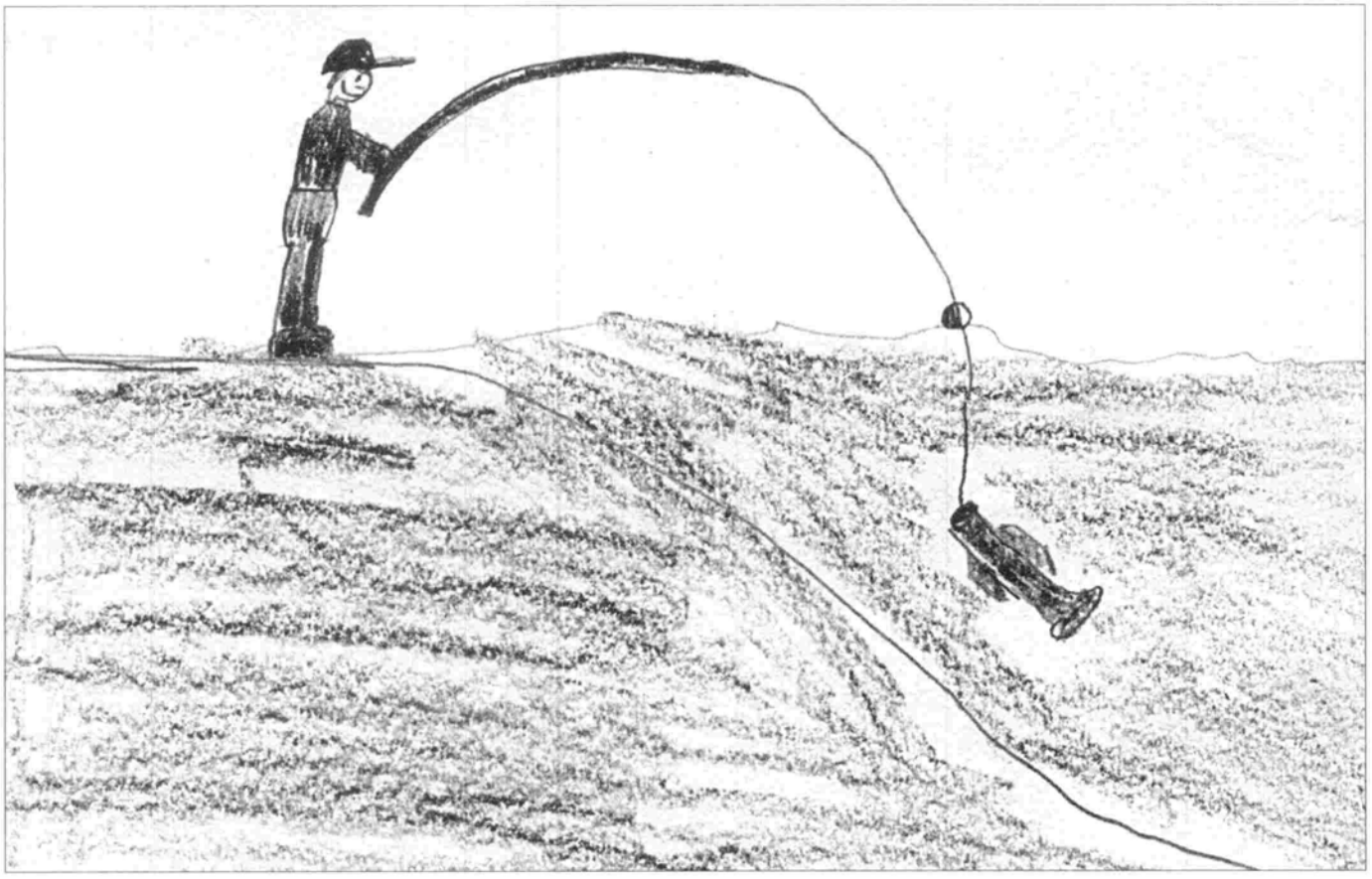
(1) timely activation of the Farmington River Coordinating Committee; and

(2) spirited implementation of the Upper Farmington River Management Plan.



A calm spot to take a breather from paddling, downstream of the main rapids in Satan's Kingdom.

The many interests involved in river use and management — including riparian landowners and other residents of the riverfront towns, the local governments, the State, the Farmington River Watershed Association, the Metropolitan District Commission, river recreationists, and many other individuals and organizations — are encouraged to rededicate themselves to these tasks, and to do so with the energy and spirit of cooperation that produced the ground-breaking achievements of the study process.



Postscript: Designation of the Connecticut Study Segment

Have you Mr. President ever been to or seen the Farmington River? If no, Shame on you. Go see it sometime, It's beautiful. If yes, you are one lucky guy. I can clearly remember two occasions I spent at the Farmington River. I'll only tell you one time.

It was spring and my friend and I were at a baseball game in Riverton. Kellie and I decided to go through the woods to the river. Possibly to cross it. So when we reached the river Kellie and I saw a fisherman and we all started talking. We hopped from rock to rock listening to the water rushing about the strong, heavy and fast current trying to fight its way past the rocks and every now and then a fish would fly out of the water or a bird swoop down near the water. We stayed until the fisherman was getting ready to leave and the game was just about over.

Karen Arcelaschi

Following the Farmington River Study Committee's unanimous vote on April 29, 1993 to recommend designation of the Connecticut segment, a great deal of momentum existed to move forward toward that goal. Rather than waiting for the Study Report to be completed, as would normally be the case, work began immediately on legislation to add the river to the National Wild and Scenic Rivers System.

Traditionally, designating legislation is brief and generic: it amends the Wild and Scenic Rivers Act to include the segment in question, identifies the linear extent of the segment, and specifies a federal agency to be responsible for its administration. These typical designations also carry with them the generic provisions of the Wild and Scenic Rivers Act regarding sensitive issues such as the authorization of federal land acquisition and the requirement for a comprehensive management plan to be developed post-designation.

There was a clear recognition from the outset that this traditional approach would not be appropriate for the Farmington River. Instead, a detailed bill was needed that would be hand-tailored to reflect first, the Farmington's particular circumstances (including the predominance of private land in the river corridor and the complexity of water management issues in the basin), and second, the singular achievements of the study process (including the implementation of new shorelands zoning ordinances, the completion of the Instream Flow Study, and the preparation of a comprehensive management plan).

After obtaining extensive input from the Study Committee and other participants on specific provisions to be included, Congresswoman Nancy Johnson and Senator Joseph Lieberman of Connecticut introduced legislation to designate the river in their respective chambers of Congress on July 30, 1993. The parallel bills, identified as H.R. 2815 and S. 1332, were introduced with unanimous cosponsorship by the other members of the state's delegation.

Hearings on the legislation were held on October 27 and October 28, 1993, respectively, by the Senate Subcommittee on Public Lands, National Parks, and Forests, and the House Subcommittee on National Parks, Forests, and Public Lands. At those hearings, Congresswoman Johnson, Senator Lieberman, Senator Christopher Dodd (also of Connecticut), and several members of the Farmington River Study Committee testified strongly in support of designation. On behalf of the Department of the Interior, the National Park Service testified in favor of the legislation. American Rivers, Inc., a private conservation organization, also testified in support, but expressed reservations about the bill's possible implications for other designations. Other private conservation groups submitted written testimony supporting the legislation.

On February 10, 1994, the House Subcommittee forwarded an amended version of the legislation to the full House Committee on Natural Resources. After approval by the Committee on March 2, the amended bill passed the full House on March 15, 1994, by voice vote.

The House-passed version was subsequently forwarded to the Senate, and referred to the Subcommittee on Public Lands, National Parks, and Forests of the Committee on Energy and Natural Resources. After minor amendments, the full Committee approved the bill on May 11. The revised legislation passed the full Senate by voice vote on June 25, 1994.

Because of the Senate's amendments, the bill was sent back to the House for final approval. This was secured by voice vote on August 16, 1994.

The legislation was then sent to the White House for signature. On August 26, 1994, President Clinton signed Public Law 103-313, designating the upper Farmington River in Connecticut into the National Wild and Scenic Rivers System.

Public Law 103-313 includes several provisions that are particularly noteworthy for private land river situations:

- *The bill states explicitly that management of the river after designation will be carried out in accordance with the Upper Farmington River Management Plan. It also states that the Plan satisfies the requirement of Section 3(d) of the Wild and Scenic Rivers Act for a comprehensive management plan, which traditionally would be prepared after designation. This marks the first time that designating legislation has recognized an existing plan as the foundation for long-term management, thereby eliminating the prospect of additional authorities or requirements being added after designation.*

- *The zoning ordinances adopted by the riverfront towns, and particularly the "River Protection Overlay Districts," are found to satisfy the standards and requirements of Section 6(c) of the Wild and Scenic Rivers Act. As a result, federal land acquisition through condemnation is explicitly precluded, in accordance with Section 6(c). This is the first time that Congress has explicitly recognized the adequacy of existing local ordinances at the time of designation.*
- *In keeping with the Management Plan's emphasis on a partnership approach, the bill specifies that administration of the river is to be handled through cooperative agreements between the Secretary of the Interior and the State of Connecticut, the riverfront communities, and the other major river interests. To achieve this, the bill employs a rarely-used provision in the Wild and Scenic Rivers Act (Section 10(e)) that encourages state and local participation in administration.*
- *The bill states clearly that the primary role for the National Park Service after designation will be to provide technical assistance, staff support and funding to assist in the implementation of the Management Plan, rather than becoming the primary manager.*
- *To further ensure that the federal role will not become a dominant one, the bill states directly that the river will not become a unit of the National Park System.*

Copies of Public Law 103-313 and the complete legislative history are provided in **Appendix J**.

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Special thanks to the 1990-91 fifth grade students at the Barkhamsted Elementary School for the drawings and writings about the Farmington River that are found on the chapter dividers throughout this report.

No project of this complexity, scope, and duration could be completed successfully without the contributions of many people and organizations. In particular, we would like to thank the members of the Farmington River Study Committee and the key contributors listed earlier in this report for their dedication and spirit, and for sticking with it through thick and thin. We also would like to acknowledge the steadfast support of Congresswoman Nancy Johnson, the chief Congressional sponsor of the project, and her Chief of Staff, Ron Lefrancois, as well as Senator Joseph Lieberman and his Legislative Assistant, Barbara Cairns.

At the risk of unintended omissions, the following is a list of the many others who deserve special recognition.

Residents of the Study Towns:

Steven Bibeau
Warren & Karlene Blass
Nancy Blum
John Brock
Tom & Jeanie Buck
Bob Burke
Connie Canty
Anina Carr
Gordon Chapman
June Clark
Jim & Cheryl Clarkin
Martin Connor
Kathy Corkum
Bill & Susie Crofut
Bob Donaldson
James Ebitz
Mary Fletcher
Joe Fortunato
Michael Fox
Deborah Gilpin
Joel Gordes
John & Kay Greaser
Bruce Gresczyk
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Steven Hennessey
William Hodge
Diana Holcomb
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Frank Jones
Bob Judd
Scott Kania
Jay Kaplan
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Frank Kearney
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Alice Kimball
Michael Klein
John Kulick
Robert LaGoy
Walter Landgraf
Donna LaPlante
Carmella Lattizori
Sarah & David Leff
Edith Leopold
James Lombard
Joan Markure
Richard Marr
Blake Middleton
Eric Munson
Charles Nelson, Jr.
Karen Nelson
William & Mabel O'Brien
Margaret O'Clair
Margaret & Phil Orzel
Gary Parker
Cindy Peck
Ed & Roberta Pettit & family
Cindy Pinsky
Steven Pyenson
John Raabe
Nancy Rogers
Susan Roman
Hal Schroeder
Sheldon Seller
Carrie Sinish
Jim & Ellen Smith
Reginald Smith, Sr.
Reginald Smith, Jr.
Tom Stanton
Susan Tarasuk
Mark & Pauline Telford
Norman Thompson
Steven & Pam Torres
Patricia Vincenti
Paul Volvoski
Phil Walker
Ben Warner
Ken Wassall
George Wilber
Walter & June Wink
Chris Winsor
Elaine Ziegler

Local boards and commissions (selectmen, planning & zoning, conservation, inland wetlands, etc.) from the study towns also played an important role throughout the project.

Hartford Metropolitan District Commission:

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American Rivers, Inc.:

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U.S. Fish and Wildlife Service:

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U.S. Army Corps of Engineers:

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H. Farrel McMillan
Reese Morgan
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Massachusetts Department of Environmental Management:

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Farmington River Anglers Association:

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and
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Farmington River Club:

Steve Beal
Bill & Julie Cole
and
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U.S. Senator Christopher Dodd (CT)
State Representative Richard Ferrari (CT)
Congressman Gary Franks (CT)
Congressman Sam Gejdenson (CT)
State Representative Christopher Hodgkins (MA)
Congresswoman Barbara Kennelly (CT)
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Congressman John Olver (MA)
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Congressman Christopher Shays (CT)
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Governor Lowell P. Weicker, Jr. (CT)

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David Conrad, National Wildlife Federation
Eliza Cope, Trust for Public Land
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John Echeverria, National Audubon Society
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Rich Hathaway, Sierra Club/Connecticut Chapter
William Hearn, Normandeau Associates
Karl Heckler, Berkshire Regional Planning Commission
Edward Kaynor, University of Massachusetts' Water Resources Research Center
Warren Kimball, Massachusetts Dept. of Environmental Protection/Div. of Water Pollution Control
Charles Larom, Stanley Works
Jim Leahy, Leahy Resources
Roger Marshall, Holyoke, MA
Thomas McGowan, Litchfield, CT
Tom Miner, Connecticut River Watershed Council
Mary Parkin, Cambridge, MA
Karl Pech, Simsbury, CT
Glenn Pontier, Narrowsburg, NY
Whitty Sanford, Connecticut River Watershed Council
Mac Thornton, West Virginia Rivers Alliance
Robert Wagner, American Farmland Trust
Mike Weland, National Parks and Conservation Association
Marchant (Lucky) Wentworth, Isaac Walton League
Lynn Werner, Housatonic Valley Association

Other Organizations:

Appalachian Mountain Club/Connecticut Chapter
Connecticut Ornithological Association
Farmington Land Trust
Farmington Valley Garden Club
Greenwoods Garden Club
Quinnipiac River Watershed Association
Sandisfield Citizens Association
Trout Unlimited/Connecticut Chapter

Thanks to the Connecticut Department of Environmental Protection for providing office space for National Park Service project staff in the DEP Pleasant Valley field office.

The author would like to extend his personal thanks to the following people for their warm and generous hospitality during countless trips to the Farmington Valley: Neil & Deb Gilpin; Nathan Frohling & Debbie Bloom; Skip, Nancy, Carolyn, Katie, and Mary Rogers; David, Carrie, Colin, and Jenny Sinish; and Bob, Sue, Vanessa, Emily, and Cole Tarasuk.

A special thanks also to Drew Parkin for his guidance, perspective, and support, and for yet again going beyond the call of duty for the sake of protecting rivers.

The following list identifies sources that have been used specifically in the preparation of this final report. The companion documents referenced throughout this report (and listed after the Table of Contents) include separate citations and bibliographies to identify sources used in their preparation. Those sources are not repeated here.

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Pioneer Valley Planning Commission, in cooperation with the Westfield River Watershed Association
1993 *Westfield River Greenway Plan (revised).* West Springfield, MA.

U.S. Congress. House
1986 *Report No. 503,* Summarizing the Hearings on Public Law 99-590 Before the Committee on Interior and Insular Affairs.

Wild and Scenic Rivers Act, Public Law 90-542 (as amended). October 2, 1968.

(F) the facilities deemed necessary to accommodate and provide access for such visitors and uses, including the location and estimated costs of such facilities.

(c) REPORT TO CONGRESS.—Within three years of the date of enactment of this title, the Secretary of Agriculture shall transmit to the Congress a comprehensive report containing the results of the study conducted pursuant to this section.

Appropriation authorization.

(d) FUNDING.—There are hereby authorized to be appropriated up to $150,000 to carry out the provisions of this section.

(e) COST SHARING.—Not more than 75 per centum of the cost of the study carried out under this section shall be paid by the United States: *Provided*, That in no event shall the contribution of the United States exceed $150,000. The remaining portion of such costs shall be contributed by interested parties. The portion contributed by such interested parties may consist of appropriated funds or contributed services.

SEC. 104. Notwithstanding any other provision of law, the Secretaries of Agriculture and the Interior shall, within 30 days of the enactment of this title, complete the exchange as described in the Decision Notice and Finding of No Significant Impact, Trust For Public Land Proposed Land-for-Land Exchange, signed by the Rocky Mountain Regional Forester, on August 22, 1985, to acquire certain private lands in the portion of the Cache la Poudre River designated in section 3(a)(56)(B) of the Wild and Scenic Rivers Act (16 U.S.C. 1274(a)(56)(B)).

TITLE II—FARMINGTON, WEST BRANCH, CONNECTICUT AND MASSACHUSETTS

Farmington Wild and Scenic River Study Act. 16 USC 1271 note.

SEC. 201. This title may be cited as the "Farmington Wild and Scenic River Study Act".

SEC. 202. (a) The Congress finds that—

Fish and fishing.

(1) the West Branch of the Farmington River and related land areas possess resource values of national significance, such as significant white water rapids, undeveloped lands, scenic and cultural areas, important sport fisheries, and prime agricultural lands;

(2) based on the National Rivers Inventory by the National Park Service, published in January 1982, this portion of the Farmington River is eligible for study for inclusion in the wild and scenic rivers system;

State and local governments.

(3) there is strong support among local, State, and Federal officials, area residents, and river users for a concerted cooperative effort to manage the river in a productive and meaningful way; and

State and local governments.

(4) in view of the longstanding Federal practice of assisting States and local governments in protecting, conserving, and enhancing rivers of national significance, the United States has an interest in assisting the States of Connecticut and the Commonwealth of Massachusetts and the appropriate local governments in managing the river.

(b) Section 5(a) of the Wild and Scenic Rivers Act (16 U.S.C. 1276(a)) is amended by adding the following new paragraph:

"(92) FARMINGTON, WEST BRANCH, CONNECTICUT AND MASSACHUSETTS.—The segment from the intersection of the New Hartford-Canton, Connecticut, town line upstream to the base of the West Branch Reservoir in Hartland, Connecticut; and the segment from the confluence with Thorp Brook in Sandisfield, Massachusetts, to Hayden Pond in Otis, Massachusetts.".

(c) Section 5(b) of such Act (16 U.S.C. 1276(b)) is amended by adding at the end thereof the following new paragraph:

Reports.

"(7) The study of the West Branch of the Farmington River identified in paragraph (92) of subsection (a) shall be completed and the report submitted thereon not later than the end of the third fiscal year beginning after the enactment of this paragraph. Such report shall include a discussion of management alternatives for the river if it were to be included in the national wild and scenic river system.".

(d)(1) At the earliest practicable date following the enactment of this title, but not later than forty-five days after enactment, the Secretary of the Interior (hereinafter in this title referred to as the "Secretary") shall establish the Farmington River Study Committee (hereinafter in this title referred to as the "Committee"). The Secretary shall consult with the Committee on a regular basis during the conduct of the study. Membership on the Committee shall consist of seventeen members appointed by the Secretary as follows:

(A) One member shall be appointed by the Secretary.

(B) Two members shall be appointed by the Secretary from a list of candidates supplied to the Secretary by the Governor of the State of Connecticut.

(C) Two members shall be appointed by the Secretary from a list of candidates supplied to the Secretary by the Governor of the Commonwealth of Massachusetts.

(D) Two members shall be appointed by the Secretary from a list of candidates supplied to the Secretary by the Farmington River Watershed Association.

(E) One member shall be appointed by the Secretary from each of the eight towns located along the West Branch of the river. The governing body of each of the eight towns shall provide a list of candidates to the Secretary from which the eight appointments under this paragraph shall be made.

(F) Two members shall be appointed by the Secretary from a list of candidates supplied to the Secretary by the Metropolitan District Commission of Hartford, Connecticut.

(2) The members of the Committee shall elect a chairman, vice chairman, and recording secretary from the membership at the first official meeting of the Committee. Official minutes shall be kept of each regular and special meeting of the Committee and shall be open for public inspection.

(3) Any vacancy on the Committee shall be filled in the same manner in which the original appointment was made. Any member appointed to fill a vacancy occurring before the expiration of the term for which his predecessor was appointed shall be appointed only for the remainder of such term. Vacancies in the membership of the Committee shall not affect its power to function if there remain sufficient members to constitute a quorum under paragraph (4) of this subsection.

(4) A majority of the members of the Committee shall constitute a quorum for all meetings.

(5) The Committee shall advise the Secretary in conducting the study of the Farmington River segment specified in section 5(a)(92) of the Wild and Scenic Rivers Act. The Committee also shall advise

16 USC 1276.

the Secretary concerning management alternatives should the river be included in the wild and scenic rivers system.

(6) Members of the Committee shall serve without compensation but may be compensated for reasonable and necessary expenses incurred by them in the performance of their duties as members of the Committee.

(7) The Committee may accept and utilize the services of voluntary, uncompensated personnel.

(8) The Committee shall terminate on the later of the following:

(A) the completion of the river study of the Farmington River described in section 5(a)(92) of the Wild and Scenic Rivers Act; or

16 USC 1276.

(B) the publication of management alternatives should the river be included in the wild and scenic rivers system.

(e) As used in this title (other than in subsection (b)) the term "River" means the segments of the Farmington River described in paragraph (92) of section 5(a) of the Wild and Scenic Rivers Act (16 U.S.C. 1275(a)).

Appropriation authorization.

(f) There are authorized to be appropriated up to $150,000 to carry out the purposes of this title.

TITLE III—GREAT EGG HARBOR, NEW JERSEY

16 USC 1276.

SEC. 301. (a) STUDY.—Section 5(a) of the Wild and Scenic Rivers Act (16 U.S.C. 1271-1287) is amended by adding at the end thereof the following new paragraph:

"(93) Great Egg Harbor River, New Jersey: The entire river.".

(b) COMPLETION DATE.—Section 5(b)(3) of such Act is amended by adding at the end thereof the following: "The study of the river named in paragraph (93) of subsection (a) shall be completed not later than three years after the date of the enactment of this sentence.".

(c) AUTHORIZATION OF APPROPRIATIONS.—Paragraph (4) of section 5(b) of such Act is amended by adding at the end thereof the following: "Effective October 1, 1986, there are authorized to be appropriated for the purpose of conducting the study of the river named in paragraph (93) not to exceed $150,000.".

TITLE IV—SALINE BAYOU, LOUISIANA

SEC. 401. Section 3(a) of the Wild and Scenic Rivers Act (16 U.S.C. 1274(a)) is amended by adding the following new paragraph:

"(57) SALINE BAYOU, LOUISIANA.—The segment from Saline Lake upstream to the Kisatchie National Forest, as generally depicted on the Proposed Boundary Map, numbered FS-57, and dated March 1986; to be administered by the Secretary of Agriculture. For the purposes of the segment designated by this paragraph, there are authorized to be appropriated for fiscal years commencing after September 30, 1986, not to exceed $1,000,000 for the acquisition of lands and interests in lands and for development.".

Appropriation authorization.

TITLE V—GENERIC AMENDMENTS

SEC. 501. (a) Section 3(a) of the Wild and Scenic Rivers Act (16 U.S.C. 1274(a)) is amended by redesignating the paragraphs relating to the Au Sable River, the Tuolumne River, the Illinois River, and the Owyhee River as paragraphs (52) through (55) respectively.

PLANNING AND ZONING COMMISSION

TOWN OF HARTLAND, CONNECTICUT

EAST HARTLAND, CONNECTICUT 06027

AMENDMENTS TO THE HARTLAND ZONING REGULATIONS CONCERNING FARMINGTON RIVER PROTECTION OVERLAY DISTRICT

In accordance with Section 8-2 of Title 8 of the Connecticut General Statutes, and Article VIII of the Zoning Regulations of the Town of Hartland, Connecticut as amended and revised effective December 1, 1973, said Zoning Regulations are hereby further amended, as follows:

Section I-3 is amended by the addition of the following new definition:

The Farmington River Protection Overlay District (hereinafter "District") is a protected corridor of land along the entire length of the Farmington River within the Town of Hartland consisting of the area within the edges of the river's bed and a contiguous and parallel Buffer Strip as more specifically defined in Section IV-6.

Section IV is amended by the addition of the following new subsection 6:

FARMINGTON RIVER PROTECTION OVERLAY DISTRICT
The Farmington River Protection Overlay District shall be defined as the Farmington River (hereinafter the "River") within the Town of Hartland and including the area within the edges of the River's bed and contiguous and parallel buffer strip which together constitute a culturally significant and envirionmentally sensitive river corridor. All use and activities established after the effective date of this regulation shall be in accordance with the standards and requirements in this regulation which are established to accomplish the following publicly recognized purposes:

A - Purposes

a. To establish standards and requirements for the use and conservation of the District in recognition of the River's eligibility for designation under the National Wild and Scenic Rivers Act and in the furtherance of the Town's resolution dated February 25, 1991 to contribute to the regional conservation of the River corridor.

b. To prevent any alterations to the natural flow of the River in order to maintain its ecological, recreational, aesthetic and other qualities such as documented in the Farmington River National Wild and Scenic River Study and other federal, State, and local documents relating to the Farmington River.

c. To prevent water pollution caused by erosion, sedimentation, nutrient and pesticide run-off, and waste disposal facilities and to encourage retention and enhancement of shore vegetation cover, including diversity of native species, age distribution, and ground cover density to provide a protected buffer and pollution filter strip along the river bank as required in other important riverine corridors and as recommended in numerous pollution prevention studies.

d. To conserve the ecological, water supply and flood storage functions of the River's flood plain, and related groundwater table and aquifer recharge areas and to protect life, public safety and property from flooding hazards, especially within the River's flood hazard areas as defined and protected under the Flood Plain Overlay District Regulations.

e. To protect valuable fisheries and wildlife habitat within and along the Farmington River, as cited in various documents including the Farmington Wild and Scenic River Study (Draft Eligibility Report, August, 1989) and the State Comprensive Outdoor Recreation Plan.

f. To conserve and enhance the natural scenic and topographic conditions in the river corridor and its environmental quality recognizing that these are vital to the economic and environmental health of the Town and, to preserve the natural scenic quality of the River by maintaining where possible screening of man-made structures from the River view.

g. To carry out the recommendations of the Town Plan of Development and the State Plan of Conservation and Development and to prevent unnecessary or excessive expenditures of municipal funds for services and utilities which might be required as a result of improper development of land within the District.

B - Definition of the boundaries of the District

The Farmington River Protection Overlay District shall consist of the West Branch of the Farmington River through the Town of Hartland and a contiguous and parallel Buffer Strip, defined as an area extending one hundred feet (100') measured landward and horizontally from both edges of the river bed as outlined on the map entitled "Farmington River Protection Overlay District." The edge of the river bed is defined as that mark along the river's edge where the presence and action of waters are so common and usual, and are so long continued in all ordinary years, as to produce soil and/or vegetation types which are distinct from that of the abutting upland.

Where there is a question or dispute over the District boundary, the Town's Building Inspector shall determine the precise location of the river bed and district boundary at any given location. Property owners who own land within the District shall not incur liability for any expense in determining the district boundary.

C - General

Applications for proposed activities within the District shall be subject to the following standards and requirements in addition to the Town of Hartland Zoning and Wetland Regulations. No site alterations, regrading, filling, or clearing of vegetation may be conducted prior to submission of an application for a zoning permit or Special Exception permit as required under these regulations, and any such alterations shall be a violation of these Regulations which shall be subject to the penalties provided under Connecticut General Statutes.

D - Basic Requirements and Limitations

Within this overlay District all uses allowed in the underlying zoning district shall be subject to the following limitations unless otherwise provided for as a Special Exception or Permitted Activity under this regulation.

The following activities shall be prohibited within the District:

a. construction of new building(s) or structure(s) or addition to an existing building or structure;
b. construction of a new septic system (including septic tank, leach fields and reserve leach fields) or any other type of waste disposal system;
c. dredging or removal of sand, gravel or other earth materials, including dumping or filling;
d. cutting or removal of trees, shrubs or other vegetation within the Buffer Strip, or
e. camping or outdoor fires within the Buffer Strip, unless conducted under permission from the particular landowner and in accordance with any other applicable ordinances of the Town of Hartland.

E - Special Exceptions

Uses and activities allowed in the underlying zoning district may be permitted by the Planning and Zoning Commission as a Special Exception subject to the above general requirements and limitations, the general standards and requirements of the Hartland Zoning Regulations, and only upon compliance with the following specific conditions, standards and requirements.

F - Special Exception for the development of a lot existing at the time of the adoption of this regulation, where there is no established principal building or use and which lot is otherwise in compliance with the Zoning and Subdivision Regulations of the Town of Hartland.

a. Conditions: Where there is a lot which existed at the time of the effective date of this regulation which did not have an existing principal building or use, and provided that either of the following conditions are met, the Commission will approve development within the Buffer Strip as a Special Exception subject to the specific Standards and Requirements contained in subparagraph b. below:

1. said lot does not contain sufficient depth for a Buffer Strip as defined herein; or
2. said lot contains sufficient depth for a Buffer Strip, but does not contain sufficient additional land to permit establishing a building or use of the lot, as otherwise permitted in the underlying zoning district.

b. Standards and Requirements

1. The applicant shall; (a)submit a Site Plan in accordance with Hartland Zoning Regulations, and (b)provide documentation that proves that the above conditions apply to the land in question and that the proposed use or activity has been designed to minimize disturbance within the Buffer Strip.

2. The Commission shall not permit a reduction of the Buffer Strip by more than is necessary to provide for the establishment of a principal building, structure or use permitted in the underlying zoning district and for necessary accessory buildings and structures.

3. In no case shall the Commission permit the total area within the Buffer Strip which is to be improved, regraded or disturbed to equal or exceed fifty percent (50%) of the total area of the Buffer Strip on any such existing lot.

G - Special Exception for the extension or enlargement of existing structures located on existing lots within the Buffer Strip.

a. Conditions: Where there is a principal building or structure located within the Buffer Strip, and both the building or structure and the lot on which it is located existed on the effective date of this Regulation, the Commission will grant a Special Exception permitting such

building or structure to be extended or enlarged within the Buffer Strip, subject to the following standards and requirements:

b. Standards and Requirements:

1. The applicant shall submit a Site Plan and shall also provide documentation proving (a)that the above conditions apply and (b)that the proposal is designed to minimize disturbance within the Buffer Strip, especially within the area between the River and the existing building or structure.

2. In no case shall the Commission permit the existing and proposed area which is or will be improved, regraded or disturbed to equal or exceed fifty percent (50%) of the total area of the Buffer Strip on any such existing lot.

c. Nothing in this section shall prohibit the ordinary repair and maintenance of existing buildings or structures within the District, provided all other applicable Town building and zoning regulations are complied with, and provided also that such repair and maintenance does not result in an extension or enlargement of existing structures.

H - Removal of Timber

The Commission may permit by Special Exception the cutting of timber for forestry management purposes provided that such cutting is performed in accordance with an approved forest management plan prepared by a qualified forester licensed in the State of Connecticut, which plan shall be submitted with the application. The Commission may impose any additional conditions deemed necessary in order to protect the District for the purposes states in Section A above.

I - Removal of Vegetation for Filtered View of River

The Commission may permit by Special Exception the selective pruning or removal of trees, shrubs, and other vegetation to allow for the creation of a view of the River, provided that such shall only be a filtered view of the River designed to provide reasonable visual access to the River while maintaining,to the greatest extent possible, a natural screen of man-made structures and objects and otherwise furthering the purposes of this regulation. Any application for a Special Exception Permit pursuant to this Section I shall include a specific plan for the proposed pruning or removal delineating the particular trees to be affected and the location of such trees within the Buffer Strip. Where such plan involves removal of any tree in excess of 4" diameter at breast height,

the plan shall be prepared by a qualified forester licensed in the State of Connecticut.

J - Special Exception for Municipal Improvement

The Commission may permit by Special Exception a municipal improvement which unavoidably must encroach upon the Buffer Strip provided the Town demonstates that there is no practical alternative for the provision of the needed utility or improvement outside of the District and that all reasonable measures will be taken to minimize the adverse impact of such improvement.

K - Special Exception for Fire Prevention Facilities

The Commission may permit by Special Exception the installation of a Fire Prevention Facility consistent with the other provisions of this Regulation.

L - Activities Permitted within the District Without a Zoning Permit

The following activities may be carried out within the District without the necessity of a zoning permit.

a. The selective pruning or removal of trees or shrubs to:

1. Maintain a pre-existing view of the River from a principal structure;

2. Provide foot access to the River by means of an unimproved and unpaved path which meanders down to the River in accordance with the natural contours of the property in question;

3. Remove dead, diseased, unsafe or fallen trees and noxious plants and shrubs in such a manner as to minimize disturbance of other vegetation within the area;

4. Maintain, repair or expand an existing primary structure or accessory use as long as the vegetation is not removed within twenty feet (20') from the edge of a graded area; and

5. For these purposes and wherever permitted under this regulation, selective pruning and/or removal shall be done in a manner that;

(A) promotes stream bank stabilization and erosion control by maintaining stump and root structure to the maximum extent possible, and

(B) provides the greatest possible screening of man-made structures and objects as seen from the River.

b. Grading or other surface alterations necessary for an existing primary use of a lot, provided that it is done in such a way as to minimize disturbance of vegetation and of other natural features in accordance with the purposes of this regulation. In no case shall the area affected by such grading or alteration equal or exceed 50% of the area of such lot located within the Buffer Strip.

c. Planting of perennial native species in the Buffer Strip is permitted and encouraged, especially where exposed soil and steep slopes exist, provided that such planting is otherwise completed in accordance with the other provisions of this Regulation.

d. Other Permitted Activities:

1. Surveying and Boundary posting.

2. Non-intensive and non-commercial recreational uses not requiring structures, such as hunting, fishing, and hiking.

3. Family garden plots as accessory to a residential use.

4. Continuation of farming activity which is in existence as of the effective date of this Regulation.

5. Emergency Operations.

6. Fish and wildlife management practices according to a plan approved by the County Conservaion Director.

This amended regulation and the map entitled "Farmington River Protection Overlay District" which is adopted herein by reference, shall become effective 15 days after publication of a summary thereof pursuant to the provisions of the General Statutes, Section 7-157, in a newspaper having a substantial circulation in the Town of Hartland.

Dated in Hartland, Connecticut, this 27th day of January 1992.

Received for record:
On: February 12, 1992
By: Evelyn B. Pedersen
Asst Town Clerk

Stephen W. Bibeau
Stephen W. Bibeau, Chairman
Planning & Zoning Commission
Town of Hartland, Connecticut

Amendments to the Barkhamsted Zoning Regulations concerning Farmington River Protection Overlay District

(Adopted by the Barkhamsted Planning & Zoning Commission, 7/25/91)

* 193-64. Farmington River Protection Overlay District

The Farmington River Protection Overlay District shall be defined as the Farmington River within the Town of Barkhamsted including the are within the River's ordinary high water marks and a contiguous and parallel buffer strip which together constitute a culturally significant and environmentally sensitive river corridor. All use and activities established after the effective date of this regulation shall be in accordance with the standards and requirements in this regulation which are established to accomplish the following publicly recognized purposes:

(1) PURPOSES

a. To establish standards and requirements for the use and conservation of the District in recognition of the River's eligibility for designation under the National Wild and Scenic Rivers Act and in furtherance of the Town's resolution dated October 30, 1990 and to contribute to the regional conservation of the River Corridor.

b. To prevent any alterations to the natural flow of the River in order to maintain its ecological, recreational, aesthetic and other qualities such as documented in the Farmington River National Wild and Scenic River Study and other federal, State and local documents relating to the Farmington River.

c. To prevent water pollution caused by erosion, sedimentation, nutrient or pesticide run-off, and waste disposal facilities and to encourage retention and enhancement of shore vegetative cover, including diversity of native species, age distribution, and ground cover density to provide a protected buffer and pollution filter strip along the River bank as required in other important river corridors and as recommended in numerous

pollution prevention studies, such as published by the Smithsonian Environmental Research Center.

d. To conserve the ecological, water supply and flood storage functions of the River's flood plain, and related groundwater table and aquifer recharge areas and to protect life, public safety and property from flooding hazards, especially within the River's flood hazards areas as defined and protected under the Flood Plain Overlay District as defined and regulated under Section 901 of these Regulations;

e. To protect valuable fisheries and wildlife habitat within and along the Farmington River, as cited in various documents including the Farmington Wild and Scenic River Study (Draft Eligibility Report, August, 1989) and the State Comprehensive Outdoor Recreation Plan;

f. To conserve and enhance the natural scenic and topographic conditions in the River corridor and its environmental quality recognizing that these are vital to the economic and environmental health of the Town and, to preserve the natural scenic quality of the River by maintaining where possible screening of man-made structures from the River view; and,

g. To carry out the recommendations of the Town Plan of Development and the State Plan of Conservation and Development and to prevent unnecessary or excessive expenditures of municipal funds for services and utilities which might be required as a result of improper development of land within the District.

h. Definition of the Boundaries of the District
The Farmington River Protection Overlay District shall consist of the following areas:

(1) The River which shall be defined as the area between the ordinary high water mark on each side of the River. The ordinary high water mark is that mark along the River's edge where the presence and action of waters are so common and usual, and are so long continued in all ordinary years, as to produce soil and/or vegetation types which are distinct from that of the abutting upland.

(2) A Buffer Strip consisting of one hundred feet (100') measured landward and horizontally from the ordinary high water mark as defined above.

Where there is a question or dispute over the District boundary, the Commission may require an applicant to have the ordinary high water mark determined by a certified soil scientist and if necessary the boundary shall be shown on a site plan prepared by a Connecticut Registered Land Surveyor.

I. General
Within the District the following standards and requirements shall apply. These shall be in addition to the requirements of the underlying Zoning District. Site alterations, regrading, filling, or clearing of vegetation before submission of an application for a zoning permit or Special Exception permit as required under this regulation shall be violation of these Regulations and subject to the penalties as provided under Connecticut General Statues.

j. Basic Requirements and Limitations
Within this overlay District all uses allowed in the underlying zoning district shall be subject to the following general requirements and limitations unless otherwise provided for as a Special Exception or Permitted Activity under this regulation.

(1) No use shall result in:
- an impoundment, dam or other obstruction to the flow of the Farmington River,
- A new building or structure or addition to an existing building or structure,
- a new septic system (including septic tank, leach fields and reserve leach fields) or any other type of waste disposal system, or
- dredging or removal of sand, gravel or other earth materials, nor dumping or filling.

(2) No use or activity shall be permitted which involves cutting or removal of trees, shrubs or other vegetation in the Buffer Strip.

k. Special Exception
Uses and activities allowed in the underlying zoning district may be permitted as a Special Exception subject to the above general requirements and limitations, the general standards and requirements of section 193-47 of these Regulations and only under the following specific conditions, standards and requirements.

l. Special Exception for the Development of a lot

existing at the time of the adoption of this regulation where there is no established principal building or use.

(1) Conditions: Where there is a lot which existed at the time of the effective date of this regulation (8/18/91) and
- said lot has no principal building or use, and
- said lot does not contain sufficient depth a buffer strip as defined herein,or
- said lot contains sufficient land for the buffer strip but does not contain sufficient additional depth to permit establishing a building or use of the lot permitted in the underlying zoning district:

Under these conditions the Commission may approve development within the buffer strip as a Special Exception subject to the following specific standards and requirements.

(2) Standards and Requirements
a. The applicant shall submit a site plan and provide documentation that the above conditions apply and that the proposal is designed to minimize disturbance within the buffer strip.

b. The Commission shall permit a reduction of the buffer strip by no more than is necessary to provide for establishment of a principle building, structure or use permitted in the underlying zoning district and for necessary accessory buildings and structures.

c. In no case shall the Commission permit the total area within the buffer strip which is to be improved, regraded or disturbed to equal or exceed fifty percent (50%) of the total area of the buffer strip on any such existing lot.

d. In on case shall the Commission permit any point of such improved, regraded or disturbed area be closed to the ordinary high water mark than a distance equal to 50% of the mean lot depth as measured from the ordinary high water mark boundary of the lot to the lot line which is most opposite said water mark.

m.Special Exception for the extension or

enlargement of existing structures located on existing lots within the Buffer Strip.

(1) Conditions: Where there is a principle building or structure located within the Buffer Strip, and both the building or structure and the lot on which it is located existed on the effective date of this regulation. Under these conditions such building or structure may be extended or enlarged within the Buffer Strip by Special Exception approved by the Commission subject to the following standards and requirements.

(2) Standards and Requirements:
a. The applicant shall submit a site plan and provided documentation that the above conditions apply and that the proposal is designed to minimize disturbance within the Buffer Strip, especially between the River and the existing building or structure.

b. In no case shall the Commission permit the existing and proposed area which is or will be improved, regraded or disturbed to equal or exceed fifty percent (50%) of the total area of the Buffer Strip on any such existing lot.

Nothing in this section shall prohibit or require a permit for the ordinary repair and maintenance of existing buildings or structures within the District.

n. Removal of Timber.

The Commission may permit by special exception the cutting of timber for forestry management purposes provided that such cutting is performed in accordance with an approved forest management plan prepared by a qualified forester which shall be submitted with the application. The Commission may impose any additional conditions necessary to satisfy the purposes of this regulation.

O. Removal of Vegetation for Filter View of River

The Commission may permit by Special Exception the selective pruning or removal of trees, shrubs and other vegetation to allow for the creation of a view of the River, provided that such shall only be a filtered view of the River designed to provide reasonable visual access to the River while maintaining, to the greatest extent possible, a

natural screen of man-made structures and objects and otherwise furthering the purposes of this regulation. Where such plan involves removal of tree in excess of 4 inch diameter at breast height, the plan shall be prepared by a qualified forester.

p. Special Exception for Municipal Improvement

The Commission may permit a Special Exception for a municipal improvement (such as a water line, sewer line or needed recreational facility, necessary public access, eg. handicapped access ramp) which unavoidably must encroach upon the Buffer Strip or be located within the high water mark area provided the Town demonstrates that there is no practical alternative for the provision of the needed utility or improvement outside of the District and that all measures will be taken to minimize the adverse impact of such improvement.

q. Activities Permitted within the District Without a Zoning Permit

The following activities may be carried out within the District without the necessity of a zoning permit.

(1) The selective pruning or removal of trees or shrubs to:
a. Maintain an existing view of the River from a principle structure;
b. Provide foot access to the River by means of a path which meanders down to the River;
c. Remove dead, diseased, unsafe or fallen trees and noxious plants and shrubs, and
d. Promote the health and vitality of existing vegetation.

For these purposes and wherever permitted under this regulation, selective pruning and/or removal shall be done in a manner that:
- promotes streambank stabilization and erosion control by maintaining stump and root structure wherever possible, and
- provides the greatest possible screening of man made structures and objects.

(2) Planting of perennial native species in the Buffer Strip is permitted and encourage, especially where exposed soil and steep slopes exist.

(3) Other Permitted Activities.
Activities considered generally compatible with the purposes of this regulation shall include following

and similar activities:

- Surveying and Boundary posting, including fences for the purpose of marking boundary lines subject to the limitations of Section 193-30 of these regulations.
- Non-intensive and non-commercial recreational uses not requiring structures, such as hunting, fishing an hiking.
- Family garden plots as accessory to a residential use.
- Continuation of a farming activity which is in existence on the effective date of this regulation.
- Fire prevention activities.
- Emergency operations.
- Fish and wildlife management practices according to a plan approved by the County Conservation District.

Proposed Zoning Amendment for the Town of
New Hartford, Connecticut

ARTICLE VI SECTION 17 FARMINGTON RIVER PROTECTION OVERLAY DISTRICT

1. Overview

The Farmington River Protection Overlay District ("District") shall be defined as the Farmington River (west branch and mainstem) within the Town of New Hartford including a contiguous and parallel buffer strip which together constitute a culturally significant and environmentally sensitive river corridor.

This regulation establishes standards and requirements for the use and conservation of land and water within the District in recognition of the river's eligibility for designation under the National Wild and Scenic Rivers Act. The regulation also contributes to the regional conservation of the river corridor.

The standards and requirements of this regulation are based on the Draft Eligibility and Classification Report (August 1989) and the Draft Evaluation of Existing Regulations (June 1990) prepared by The National Park Service under the auspices of the Farmington River Wild and Scenic Study Committee.

2. Purpose

The purposes of the Farmington River Protection Overlay District are to:

a. Protect life, public safety and property from flooding hazards;

b. Prevent any alterations to the natural flow of the river in order to maintain its recreational opportunities, environmental attributes, and historic features;

c. Prevent water pollution caused by erosion, sedimentation, nutrient or pesticide runoff, and poorly sited waste disposal facilities;

d. Enhance and preserve existing scenic or environmentally sensitive areas along the shoreline;

e. Conserve shore cover and encourage environmentally sensitive developments;

f. Preserve and maintain the groundwater table and water recharge areas.

g. Conserve the river's flood plain to maintain its vital ecological and flood storage functions.

h. Protect fisheries and wildlife habitat within and along the river.

3. Scope of Authority

The Farmington River Protection Overlay District shall be superimposed on the other districts established by these regulations. All existing regulations including the Town's flood plain regulations and the Zoning Regulations applicable to such underlying districts, shall remain in effect, except that where the Farmington River Protection Overlay District imposes additional regulations, such regulations shall prevail.

4. District Boundaries

The Farmington River Protection Overlay District is designed to protect the entire length of the west branch and mainstem of the Farmington River within the Town of New Hartford and that area within one hundred feet (100') measured landward from both edges of the river bed as more specifically described in paragraph 5 and as more particularly described on map entitled "Farmington River Protection Overlay District". The edge of the river bed is defined as that mark along the river's edge where the presence and action of water are so common and usual, and are so long continued in all ordinary years, as to produce soil and/or vegetation types which are distinct from that of the abutting upland.

5. River Protection Standards and Prohibited Uses
Within the Farmington River Protection Overlay District

All uses in the Farmington River Protection Overlay District are permitted as provided for in any underlying district, except that the following standards shall apply:

a. A Buffer Strip, defined as an area extending one hundred feet (100') landward from both edges of the river bed shall be required for all lots within the Farmington River Protection Overlay District. If any lot existing at the time of adoption of this regulation does not contain sufficient depth, measured landward from the edge of the river bed to provide a buffer strip one hundred feet (100') in depth, and to allow the establishment or maintenance of a use otherwise permitted in the underlying zoning district, then the Buffer Strip may be reduced to no less than fifty percent (50%) of the available lot depth, measured landward from the edge of the river bed, upon receipt of a special permit from the Commission. In acting upon any special permit application under this section, the Commission shall not reduce the Buffer Strip beyond an amount reasonably necessary to accommodate an otherwise permitted land use.

Special permit applications for modifications to the standards in this paragraph may be made by Owners of lots recorded as of October 31, 1991. Applications may seek exemption or modification of the District standards. In considering such applications, the Commission shall be guided by the following:

1. the extent to which there are other locations on the property beyond the District limits for the use or structure or activity intended;

2. the extent to which the configuration, elevation, and location of the property enable the proposed use to be in harmony with the purposes of the District;

3. the extent to which the proposed modifications and/or exemptions are the minimal needed to accommodate an otherwise permitted use.

b. No new buildings or structures shall be erected within, or moved into, the Buffer Strip. Buildings and structures existing within the Buffer Strip on the effective date of this regulation may be maintained, repaired, improved and enlarged provided it is done in such a way so as to minimize disturbance of vegetation and other natural features in accordance with the purposes of this regulation. Where there is construction and/or grading, the removal of trees or shrubs further than 20 feet from the edge of a foundation, or 5 feet from the edge of a graded area shall be considered disturbance of vegetation and other natural features.

c. New on-site septic systems, including both primary and reserve areas, may not be located within the Buffer Strip. Repairs to existing septic systems may be allowed within the Buffer Strip.

d. Dredging or removal of sand, gravel, or other earth materials, as well as dumping, filling, or other alterations, are prohibited between the edges of the river bed on each side of the Farmington River.

e. Excavation or removal of sand, gravel or other earth material within the Buffer Strip shall be prohibited. Grading or other surface alterations necessary for the primary use of the lot may be performed within the Buffer Strip provided that it is done in such a way as to minimize disturbance of vegetation and other natural features in accordance with the purposes of this regulation.

f. To minimize erosion, stabilize the riverbank, protect water quality, keep nutrients out of the water, maintain water temperature at natural levels, preserve fish and wildlife habitat, screen man-made structures where possible, and also to preserve aesthetic values of the natural river area, vegetation shall be maintained within the Buffer Strip. Clear cutting of trees and shrubs is prohibited within the Buffer Strip. Trees and shrubs may be selectively pruned or removed to achieve a filtered view of the river from the principal building or structure, and for reasonable private access to the river.

Pruning and removal activities shall insure that (1) the stump and root structure remain in place to provide for streambank stabilization and erosion control and (2) paths to the river shall meander down to the river's edge in a manner which protects the soil and vegetation from erosion while also screening man-made structures and vehicles where possible. Dead, diseased, unsafe or fallen trees and noxious plants and shrubs may be removed. Planting of perennial native species in the Buffer Strip is encouraged, especially where exposed soil and steep slopes exist.

In no case shall removal of vegetation or grading of land exceed that permitted by the Inland Wetlands Commission.

g. No impoundments, dams or other obstructions to the flow of the Farmington River may be located within the District.

h. Nothing in this regulation shall prohibit the construction, installation or maintenance of sewer pipes, storm drain pipes, utility poles, sewer plants, bridges or other municipal projects or utilities, provided that the construction and design of these projects or utilities is done in such a way so as to minimize disturbance of vegetation and other natural features in accordance with the purposes of this regulation.

6. Additional Site Plan Approval Criteria

In addition to existing site plan approval criteria required in the subdivision regulations and Zoning Regulations, the Planning and Zoning Commission shall consider whether the proposed use or uses are so located or arranged as to minimize disturbance of vegetation and other natural features within the Farmington River Protection District.

7. Application Procedures

a. None of the uses regulated under paragraph 5 shall be commenced until the Zoning Enforcement Officer has issued a zoning permit for such use.

b. Any application involving the disturbance of more than 2,500 square feet of land within the Buffer Strip shall require an application for site plan approval by the Commission.

c. Modifications or exemptions as noted in paragraph 5 shall require a special permit.

Adopted: 11/13/91

SECTION 59 - FARMINGTON RIVER PROTECTION OVERLAY DISTRICT

59.1 General Provisions:

The Farmington River Protection Overlay District (herinafter "FRPO District") is a protected corridor of water and land along the entire length of the Farmington River within the Town of Canton consisting of the River and certain shoreline environs as specified herein and on the Zoning Map of Canton. This regulation shall apply to all such areas within the protected corridor of the Farmington River which constitutes a culturally significant and environmentally sensitive area.

59.2 The FRPO District overlaps other zoning districts, and, in all cases of land use in an area governed by river protection regulations as well as other zoning regulations, the more restrictive will take precedence.

59.3 Site alterations, regrading, filling or clearing of vegetation before approval of Application for a Certificate of Zoning Compliance, Special Exception application, Site Development Plan or other permit as required under this regulation shall be a violation of these Regulations and subject to penalties as provided under Connecticut General Statutes.

59.4 The FRPO District is identified in part in the Farmington Wild and Scenic River Study's Draft Evaluation of Existing Protection dated June 1990 and further on the Zoning Map of Canton, and any subsequent revisions thereto are adopted by reference and declared to be a part of this regulation.

59.5 Purpose and Objective: The Farmington River is a major geographic feature of the Town calling for wise use, conservation and development of its resources in a way that preserves its special qualities for Canton and the larger watershed community.

59.5.1 It is the purpose of the FRPO District to promote the public health, safety, and general welfare and to minimize public and private loss due to excessive or insensitive use of the river corridor by:

a. establishing standards and requirements for the use and conservation of the FRPO District in recognition of the River's eligibility for designation under the National Wild and Scenic Rivers Act and in furtherance of the Town's resolution of July 30, 1991, about the Farmington River, and by contributing to the regional conservation of the River corridor.

b. preventing any alterations to the natural flow of the River, excluding the reach of the river below the upper dam in Collinsville, in order to maintain its ecological, recreational, aesthetic and other qualities such as are documented in the Farmington Wild and Scenic River Study and other federal, State and local documents relating to the Farmington River;

c. preventing or reducing water pollution caused by erosion, sedimentation, nutrient or pesticide run-off, and waste disposal facilities, in part by encouraging retention and enhancement of shore vegetative cover, including diversity of native species, age distribution, and ground cover density that provides a protected buffer and pollution filter strip along the River bank as required in other important riverine corridors and as recommended in numerous pollution prevention studies, such as published by the Smithsonian Environmental Research Center, and giving due regard to those decisions of the Inland Wetlands and Watercourses Agency that prevent water pollution.

d. conserving the ecological, water supply and flood storage functions of the River's flood plain, and related groundwater table and aquifer recharge areas and by protecting life, public safety and property from flooding hazards, especially within the River's flood hazards areas as defined and protected under the Flood Plain District as defined and regulated under Section 53 of these Regulations;

e. protecting valuable fisheries and wildlife habitat within and along the Farmington River, as cited in various documents including the Farmington Wild and Scenic River Study and the state Comprehensive Outdoor Recreation Plan;

f. conserving and enhancing the natural scenic and topographic conditions in the river corridor and its environmental quality, recognizing that these are vital to the economic and environmental health of the Town and, to preserve the natural scenic quality of the River by maintaining where possible screening of man-made structures from the River view; and,

g. carrying out the recommendations of the Town Plan of Development and the State Plan of Conservation and Development and by preventing unnecessary or excessive expenditures of municipal funds for service and utilities which might be required as a result of inappropriate development of land within the district.

59.6 **District Boundaries:** The Farmington River Protection Overlay District is defined as being all of the River in its entire length throughout Canton and between the ordinary high water mark on each side of the River plus additional shoreline and upland areas for a width of 100 feet measuring landward and horizontally from the ordinary high water mark and extending lineally along the entire west side of the River, and lineally upstream along the east side of the river beginning from a line perpendicular to the River and tangent to Connecticut Coordinate Sytem value N. 356822.67 E. 553123.10 and as shown on the map entitled "Farmington River Protection Overlay District" dated February 7, 1992.

59.6.1 The ordinary high water mark is that point or series of points along the River's edge where the presence and action of water are so common as to produce soil and/or vegetation types which are distinct from that of the abutting upland.

59.6.2 Where there is a question or dispute over the FRPO District boundary, the Commission may require an applicant to have the ordinary high water mark determined by a certified soil scientist, and if necessary the boundary shall be shown on a site plan prepared by a Connecticut registered land surveyor.

59.6.3 Extension of Use. Where conditions of Para 59.8.1 exist, the Commission shall permit an extension of an underlying use by no more than is necessary into the required shoreline and upland area to provide for establishment of a principle building, structure or use permitted in the underlying zoning district and for necessary accessory building and structures.

a. In no case shall the Commission permit the total area within the required shoreline and upland area which is to be improved, regraded or disturbed to equal or exceed fifty percent (50%) of the total area of the required shoreline and upland area on any such existing lot, nor shall any point of such improved, regraded or disturbed area be closer to the ordinary high water mark than a distance equal to 50% of the mean lot depth as measured from the ordinary high water mark boundary of the lot to the lot line which is most opposite said water mark.

59.7 **Permitted Uses in the FRPO District:** The following uses are permitted by right in the FRPO District to the extent they are not prohibited by any other ordinance or regulation and provided no "alteration" takes place which would result in any outcome contravening the General Provisions and the River Protection Standards of this Section. As used herein the term "alteration" means any man-made change to improved or unimproved real estate, including but not limited to buildings or structures of any nature, storage of materials, fences or barriers of any nature, mining, dredging, filling, grading, paving, excavating, drilling or clearing of vegetation.

59.7.1 Selective pruning or removal of trees to:

a. maintain a filter view of the River from a principal structure;

b. provide pedestrian access to the River by means of a meandering foot path;

c. remove dead, diseased, unsafe or fallen trees and noxious plants and shrubs; and,

d. promote the health and vitality of existing vegetation.

e. Also see Sec. 59.8.4

59.7.2 Planting of perenial native species in the shoreline and upland areas within the District is permitted and encouraged, especially where exposed soil and steep slopes exist.

59.7.3 Other permitted activitiesand uses considered generally compatible with the purposes of this Section shall include the following and similar activities:

a. surveying and boundary posting, including fences for the purpose of marking boundaries lines subject to the provisions of Para. 8.4 of these Regulations;

b. non-intensive and non-commercial uses not requiring structures or Site Development Plans pursuant to Para. 59.13, except that organized limited water events held for the purposes of show, competition or other social benefit may be allowed with a Permit issued by the Zoning Commission;

c. maintenance of existing residential accessory uses incuding lawns, gardens, play areas and sealed water supplies with encouragement of buffer plantings;

d. fire prevention activities and emergency operations necessary for safety or protection of property;

e. fish and wildlife management practices according to a plan approved by the Coutny Conservation District; and,

f. continuation of a farming activity which is in existence on the effective date of this regulation.

59.8 **Special Exception Uses** as permitted by the Zoning Commission. All permitted uses as provided in the underlying zoning district may be permitted only by Special Exception in the FRPO District subject to the General Provisions and River Protection Standards of this Section and to the provisions of Section 52 of these Regulations. Other Special Exception uses shall be:

59.8.1 Development of a lot existing but with no principal building or use at the time of the adoption of this Section (February 7, 1992), where the lot does not contain sufficient depth for the required shoreline and upland area within the District, or where the lot contains sufficient land for the required shoreline and upland area but does not contain sufficient additional depth to permit establishing a building, structure or use of the lot permited in the underlying zoning district. (See Para. 59.11, Approval)

59.8.2 Enlargement of existing structures and buildings on an existing lot and within the upland portion of the District when subject to the criteria of Para. 59.8.1.

a. After granting a special exception, no additional square footage shall be added to the same structure or building.

59.8.3 Removal of timber including the cutting of timber for forestry management purposes. Such cutting must be performed in accordance with a forest management plan prepared by a qualified forester and submitted with an application for Special Exception, and must be consistant with the vegetative cutting provisions of the Inland Wetland and Watercourses Agency regulations. Also see Sec. 59.11.1c.

59.8.4 Removal of vegetation to create a filtered view of the River by selective pruning or removal of trees, shrubs and other vegetation to allow for reasonable visual access to the River while maintaining, to the greatest extent possible, a natural screen of man-made structures or objects as viewed from the river, and otherwise furthering the purposes of this Section.

a. Where such activity involves removal of any tree in excess of 4" diameter at breast height, a plan shall be prepared by a qualified forester.

59.8.5 State, municipal and quasi municipal improvements and operations which unavoidably must encroach into the FRPO District, provided that there is no practical or feasible alternative for the provision of the needed improvement or operation outside of the FRPO District and that all measures will be taken to minimize the adverse impact of such improvement or operations as:

a. In place rehabilitation, replacement or upgrading of existing infrastructure elements including bridges, water, sewer and power lines, and drainage facilities.

b. Enlargement, relocation, or redistribution of highway maintenance facilities or those uses permitted under Para. 21.2.2.

c. Community facilities that enhance and rely upon river resources for their purpose and function.

59.8.6 Rehabilitation, replacement or upgrading of existing canals, mill ponds and dams generally, but also incorporating fish ladders and hydroelectric facilities.

59.9 **Prohibited Uses:** All uses and activities not specifically allowed as permitted uses or Special Exception uses in Paras 59.7 and 59.8 above are prohited

59.10 **Definitions:** Unless specifically defined below, words or phrases used in this ordinance shall be interpreted so as to give them the meaning they have in common usage and to give this regulation its most reasonable application

59.10.1 "Underlying District" is the zone that exists beneath the FRPO District on the zoning map.

59.10.2 "Upland Area" is that portion of the District which lies between the ordinary high water mark and the landward edge of the District (e.g. 100' landward from the ordinary high water mark).

59.11 **River Protection Standards:** Applications shall be prepared according to the following standards:

59.11.1 In reviewing an application for Special Exception within the FRPO District:

a. The applicant shall submit a Site Plan and provide documentation that the above conditions apply and that the proposal is designed to minimize disturbance within the FRPO District, especially between the River and the existing building or structure.

b. In no case shall the Commission permit the existing and proposed area which is or will be improved, regraded or disturbed, including during construction, to equal or exceed fifty percent (50%) of the total area of the FRPO District on any such existing lot.

c. Clear cutting of trees and shrubs is prohibited.

59.12 **Approval:** Applications may be approved according to the following:

59.12.1 In acting upon an application for Special Exception within the FRPO District, the Commission will consider such issues as:

a. Standards set forth in Section 52.

b. The general provisions, purposes and objectives of this section.

59.13 **Site Development Plans:** All applications for a Special Exception shall include a Site Development Plan as described in Section 51 of these regulations.

Add to Section 4:

FRPO - Farmington River Protection Overlay District

TOWN OF TOLLAND
MASSACHUSETTS 01034

SPECIAL TOWN MEETING
JUNE 10, 1991

Meeting called to order at 7:05 p.m. 21 voters in attendance

Article #8. Proposed Zoning Amendment for the Town of Tolland, Massachusetts.

Section V of the Zoning By-laws of the Town of Tolland, Massachusetts shall be amended to include the Farmington River Protection District:

FARMINGTON RIVER PROTECTION DISTRICT

1. Purpose

The purposes of the Farmington River Protection District are to:

a. Protect life and property from flooding;
b. Prevent any alterations to the natural flow of the river;
c. Protect fisheries and wildlife habitat within and along the river;
d. Control erosion and siltation;
e. Enhance and preserve existing scenic or environmentally sensitive areas along the shoreline;
f. Conserve shore cover and encourage well-designed developments;
g. Prevent water pollution caused by erosion, sedimentation, nutrient or pesticide runoff, and poorly sited waste disposal facilities.

2. Scope of Authority

The Farmington River Protection District is an overlay district and shall be superimposed on the other districts established by this Bylaw. All regulations and the Zoning Bylaw applicable to such underlying districts shall remain in effect, except that where the Farmington River Protection District imposes additional regulations, such regulations shall prevail.

3. District Boundaries

The area subject to the bylaw shall be the entire length of the West Branch of the Farmington River within the Town of Tolland. The Farmington River Protection District shall encompass those floodplain areas designated on the Town of Tolland Flood Hazard Area Boundary Maps (FHAB) for the Farmington River, West Branch. Where the floodplain has not been delineated on the FHAB maps or where the delineation is less than 200 feet from the river bank (as defined by M.G.L. Chapter 131, Section 40), the River Protection District shall be defined as that area within 200 feet, measured horizontally of the river bank. The FHAB maps are hereby made part of this ordinance, and are on file with the Town Clerk.

4. Permitted Uses

a. Agricultural production, including raising of crops, livestock, poultry, nurseries, orchards, and hay, provided that a 50' setback from the river bank is maintained.

b. Recreational uses, provided there is minimal disruption of wildlife habitat and a minimal erosion of land.

c. Maintenance and repair usual and necessary for continuance of an existing use.

d. Conservation of water, plants and wildlife, including the raising and management of wildlife.

e. Reasonable emergency procedures necessary for safety or protection of property.

f. residential accessory uses including lawns, gardens, play areas and sealed water supplies.

5. Prohibited Uses within the Farmington River Protection District

a. No altering, dumping, filing or removal of riverine materials or dredging is permitted. Maintenance of the river may be done under the requirements of M.G.L. Chapter 131, Section 40, and any other applicable laws, bylaws, and regulations.

b. All commercial forest cutting shall require the filing of a Forest Cutting Plan in accordance with the Massachusetts Forest Cutting Practices Act (M.G.L. Chapter 132, Sections 40-46). In addition, no cutting of forest or vegetation shall occur within 50 feet of the river bank. In the area between 50 feet and 200 feet from the river bank, no more than 50 percent of the existing forest basal area shall be cut in a twenty five (25) year period.

c. No impoundments, dams or other obstructions may be located within the area subject to this bylaw.

d. All other uses not specifically permitted or allowed by site plan approval within the overlay zone are prohibited.

6. River Protection Standards

All land uses, including all residences, shall comply with the following standards:

a. A buffer strip extending at least two hundred (200) feet in depth, to be measured landward from each bank of the Farmington River shall be required for all lots within the River Protection District. If any lot, existing at the time of adoption of this bylaw, does not contain sufficient depth, measured landward from the river bank, to provide a two hundred (200) foot buffer strip, the buffer strip may be reduced to 50 percent of the available lot depth, measured landward from the river bank.

b. The buffer strip shall include trees and shall be kept in a natural or scenic condition.

(1) No buildings nor structures shall be erected, enlarged or moved within the buffer strip.

c. The proposed use must be in compliance with the floodplain requirements of the Massachusetts Building Code and the Massachusetts Wetlands Protection Act.

d. New on-site wastewater disposal systems and leach fields shall be located at least one hundred and fifty (150) feet from the river bank.

e. Removal of sand, gravel or other earth material is prohibited within 200 feet of the Farmington River or within the river's 100 year floodplain, whichever is greater.

7. Additional Site Plan Approval Criteria

In addition to the Site Plan Approval Criteria contained in section VIII-B, the Planning Board shall consider whether uses proposed for Site Plan Approval in the River Protection District meet the following criteria:

a. Complies with River Protection Standards in Section V(6);

b. Is situated in a portion of the site that will most likely conserve shoreland vegetation and the integrity of the buffer strip;

c. Is integrated into the existing landscape through features such as vegetative buffers and through natural retention of shorelines;

d. Will not result in erosion or sedimentation;

e. Will not result in water pollution.

8. Non-Conforming Uses

1. Any lawful use, building, structures, premises, land or parts thereof existing at the effective date of this Bylaw or amendments thereof and not in conformance with the provisions of this Bylaw shall be considered to be a non-conforming use.

2. Any existing use or structure may continue and may be maintained, repaired and improved but in no event made larger.

3. Any non-conforming structure which is destroyed may be rebuilt on the same location but no larger than its overall original square footage.

9. Hardships

To avoid undue hardship, nothing in this Bylaw shall be deemed to require a change in design, construction, or intended use of any structure for which a building permit was legally issued prior to the effective date this Bylaw. Such construction may be completed within two years from the effective date of this Bylaw, or such construction shall be required to conform to this Bylaw.

This article passed unanimously by the 21 voters present.

Meeting adjourned at 7:20 p.m.

A true copy. ATTEST:

Cynthia R. Burrall
Town Clerk

SUMMARY OF COMMENTS ON THE MDC'S STRATEGIC PLAN ELEMENTS BY 3 AGENCIES:
The Connecticut Department of Environmental Protection, the Farmington River Watershed Association, and the University of Massachusetts Water Resources Research Center

Supplemented by Comparative Comments on the MDC's Individual Water Supply Plan

Sources: MDC Water Supply Strategic Plan, Final Report, February 1989 and Appendices thereto: Report of DEP Commissioner Carothers 9/29/88; FWRA "Comments" 9/9/88; WRRC, various memoranda; e.g., "Questions of Fact ...", 1/24/89

The Metropolitan District Water Supply Plan as approved by the Commissioner of Health Services September 6, 1991

MDC Strategic Planning Elements	DEP Comments	FRWA Comments	WRRC Comments	Approved MDC Individual Water Supply Plan
A. The Strategic Planning Process (pp. 1-1 + 2; p. IV-3, Item 5). Explains the strategic approach to planning; emphasizes formation of a managerial decision - making framework that can accommodate changes in circumstances. Specifies a series of managerial actions structured to have a high probability of success. Features the use of implementing strategies best calculated to meet future needs. In this case, sources of supply, such as the augmentation of the East Branch System and groundwater, will be vigorously pursued, as will water conservation efforts; the West Branch of the Farmington River is recommended to be reserved now for future use as a water supply source (pp. VII, IV-3). The "99% dry year" standard, as mandated by the State of Connecticut, has been used for planning purposes.	This is an improvement over the usual planning process in water resources which often features unequivocal long-range commitment to planned facilities. (p. 18) East Branch augmentation, groundwater and conservation "will carry the District through the year 2030 planning horizon without the need for use of the West Branch. The proposed mixed use of the West Branch System, therefore, should be reserved as an alternative of last resort" (p. 2).	MDC is "missing a leadership opportunity". A truly strategic plan would focus on groundwater and conservation, holding the West Branch of the Farmington River in reserve as a back-up option. The West Branch will be protected, while the other options may be lost to pollution or development (p. 3).	1. The "change with changing circumstances" aspect of the strategic planning process is inconsistent with statement that the West Branch must be reserved now for future use as a water supply source. 2. The "99% dry year" is a Ct. State regulation but it is 5 times more stringent than the traditional safe yield standard. In a humid state it is very conservative. 3. Adoption of both the 99% dry year and high likely demand scenario, which does not include any conservation, compounds the conservativeness of forecasting even further.	Before 2030, the Colebrook/West Branch reservoir system will be used only as a last resort in the event that the amount of good quality, economically accessible groundwater anticipated in the plan does not sufficiently materialize to fulfill actual demand. Consistent with the State Plan of Conservation and Development, these existing improvements should be preserved as a potential future regional water supply for the period beyond 2030, if not before, in other words, a "backup" source.

MDC Strategic Planning Elements	DEP Comments	FRWA Comments	WRRC Comments	Approved MDC Individual Water Supply Plan
B. Water Demand 1. Population Increase to 2030. Population served by the MDC system (within the MDC's "exclusive service area) is projected to increase from about 400,000 in 1987 to 440,000 by 2010 and to about 500,000 by 2030 when population "saturation" in the "exclusive service area" is expected to occur (p. III-1).	No comment.	No Comment.	1. The CDM/WFA document does not provide adequate information to specify size of population served by the MDC system in 1980, 1985, or any other date (Appendix B-1). For example, "10-town" area is said to contain "over 99%" of MDC's domestic service (Table 3, B-1, p. 11), but approximately 7.0 mgd (or 15% of MDC usage) appears to occur outside the 10-town area (Flaherty & Giavara, p. 26 and CDM/WFA Append. B-1, p. 13). 2. Hartford, E. Hartford, and West Hartford contain about two thirds of MDC's service population. The basis for predicting population increases in those communities is not sufficiently clear given the recent population decline in each. The 3 communities lost 33,375 people between 1970 and 1980. Hartford's population decline is long-term, 41,005 between 1950 and 1980. (The federal census of 1980 is the most recent actual head-count of population.) 3. The idea of population saturation is a radical assumption in this otherwise conservative planning document. If population saturation occurs, MDC will need no additional supply beyond 2030 (except for increased use per capita -- which, itself, would be contrary to water conservation policy).	The basis for population projection of the IWSP are the official projections of the Office of Policy and Management as required by Department of Health Service regulations. The OPM projection of 510, 140 for the MDC's exclusive service area - in 2030 is virtually the same as the 500,000 "saturation" population estimate used in the earlier MDC Strategic Plan.

MDC Strategic Planning Elements	DEP Comments	FRWA Comments	WRRC Comments	Approved MDC Individual Water Supply Plan
2. Per capita use increases and forecast scenarios (Appen. B1, pp. 5 & 6; p. III-2) each based on different levels of per capita consumption: Upper Bound, High Likely, Low Likely, and Lower Bound. Spread between Upper Bound and Lower Bound is 23 gpcd or 11 mgd by 2010. No estimate of gallons per capita/day is given for 2030. Increased need for 5 mgd domestic is estimated after 2010 (p. 18, B-2).	1. MDC should establish conservation goals to reduce per capita projections (pp. 2 & 7). 2. High Likely and Upper Bound scenarios are unacceptable given the state's policy regarding conservation. 3. With a reasonable retrofit program alone, the domestic demand should fall from about 71 gpcd to at least 65 gpcd or lower, resulting in a 2030 projected decrease of 5 mgd in the 10-town area demand (p. 10).	1. Water conservation goals should be established (pp. 2, 6-7). 2. Examination of the curve of the per capita demand shows a leveling off of demand without any input of water conservation. Given the trend to water conservation and new water legislation which establishes firm state water conservation policy and requires water conservation actions increases in per capita demand are without basis.	1. "Low Likely" and "Lower Bound" scenarios are not used in the strategic plan, i.e., they are purely academic forecasts. 2. Use of very conservative per capita demand scenarios ("high likely" and "upper bound") in addition to use of the conservative "99% dry year" safe yield standard (under state regulation) doubles-up the conservativeness of water demand. 3. Reliance on upper bound and high likely scenarios in the strategic plan precludes use of conservation in per capita use forecasts, contrary to state policy and legislation.	1. The IWSP projection of demand is based on a gallons per capita per day consumption rate of 79 which is the same as experienced in 1989. It is assumed that this rate will be constant through the period to 2030. 2. The IWSP uses an approach which "discounts" the estimated effects of conservation from total demand and, in effect, relies on two projections -- one with conservation and one without with supply source actions geared to what actually transpires (see chart: "MDC Water Use/Safe, Yield Comparison).
3. Not-domestic demand. Non-domestic demand is expected to increase from 30.0 mgd in 1986 to 44.3 in 2030. Amounts for industry, commercial and municipal are Flaherty & Giavara estimates, as reviewed by Camp Dresser & McKee. All non-domestic demand figures in the Plan Report include a 5 mgd contractual commitment to supply New Britain.	1. Since non-residential demand is 56% to 65% of total demand, MDC should document nondomestic demand (pp. 2, 5 & 11). 2. Industrial demand is likely to decrease in the future because of increased treatment technology and a shift toward service industry in the State (p. 11).	1. Since Flaherty and Giavara were very wrong on domestic projections, non-domestic FGA data should also be challenged (p. 8). 2. The New Britain commitment is purely legal and not substantive (p. 8).	1. The FGA non-residential data are contradictory. For example, the Phase I report says that "new companies are replacing those that move out on a one-to-one basis' (p. 12), but "the decline of water use by exiting industries is expected to be balanced by the anticipated growth of new industries..." (p.24). Also, the report declares that new industry uses much less water than old (p. 13), that "old" industries are expected to cut water use in half by the year 2000 (p. 24), but that industrial water use will nevertheless increase from 13.8 mgd in	1. The IWSP non-domestic demand projections are based on a totally new study by Camp Dresser & McKee (CDM) with no reference or connection to the Flaherty & Giavara estimates of 1981. 1989 has been used as a base year wherein non-domestic demand was 23.1 mgd. An additional 8.4 mgd is projected bringing the total of non-domestic to 31.5 mgd in 2030.

MDC Strategic Planning Elements	DEP Comments	FRWA Comments	WRRC Comments	Approved MDC Individual Water Supply Plan
3. Non-domestic demand (cont.)			1990 to 17.6 mgd in 2010 (p. 26). 2. Non-domestic demand is not discussed in the Strategic Plan "Final Report" of Feb. 1989. The appendix to the strategic plan report declares that it has adopted FGA's nonresidential demand figures, but it presents a table (B1, Table 4, p. 14) which bears no relationship to anything presented by FGA (including major increased industrial use forecasts for Hartford, Wethersfield, Rocky Hill, Newington, Windsor, East Hartford, West Hartford, Glastonbury, and Farmington, where FGA say, p. 24, that no net industrial use increases will occur.) 3. CDM/WFA have made no study of their own of non-domestic demand which is over 50% of MDC demand. 4. FGA's approach to municipal and commercial use is to forecast continuation of increases experienced between 1970 and 1980 without regard to conservation. 5. In light of the 4 points above, there appears to be insufficient evidence for predicting any increase in non-domestic demand, and, in fact, for industrial use in particular, the evidence favors future reduction in demand.	

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C. Potential Supply Sources				
1. East Branch Modifications. Obtain 10 mgd addition by lowering minimum pool at Barkhamsted and Nepaug by 10 feet each and activating Lake McDonough for limited water supply during during non-recreational season. These modifications are projected to enable MDC to meet demands to approximately 2010.	Agree with strategic plan (p. 2) but an environmental impact study will be required (p. 7).	Agree that these operational changes should be implemented.	1. The argument that under-water geometry limits yield is not sufficient by itself for not going lower than 480 feet at Barkhamsted & 445 at Nepaug. According to the final plan report (p. 111-6), Barkhamsted alone could be lowered to 450 feet. This would mean an increased safe yield of over 3 mgd beyond the 4 mgd realizable at 480 feet (Append. C6). 2. Additional storage to catch spillage should be investigated (C6, p. 69).	East Branch Modifications 1. Obtain 6 mgd additional by lowering the minimum elevation at Barkhamsted to 480' and the minimum at Nepaug to 445'. Use of Lake McDonough has been removed as a supply element.
2. Groundwater (111-10, IV-7, V-10-12; Appen. C5) Obtain a minimum of 4-8 mgd from an unknown potential in available aquifer areas. Focus initial efforts on the South Glastonbury aquifer area (DEP area 40-3) as identified in section C5 of the Appendix; place second priority for groundwater exploration and potential development on areas 40-4 and 43-13 due to estimated potential yield, land use considerations and proximity to MDC system. Be prepared to adjust estimate of groundwater yield upon thorough investigation of these and other area aquifers.	1. Groundwater is usually a less costly alternative and MDC is biased toward surface sources (p. 5). 2. MDC should develop a specific strategy and budget for groundwater source protection and land acquisition (pp. 3 & 9). 3. Connecticut River aquifers should be developed before the Farmington (pp. 2 & 9). 4. The amount of ground water realistically obtainable is from 21.2 to 39.8 mgd (p. 2).	1. Groundwater is a "missed opportunity" in MDC's planning. 15 mgd is a conservative figure. It should be protected now and developed systematically in the future using only the first "short list"! 2. The site-elimination rationale in the Strategic Plan is inconsistently applied (e.g., Rocky Hill eliminated but Granby retained). (p. 5). 3. The MDC groundwater program is limited, lacks specifics and emphasizes not how groundwater can be achieved, rather	1. No engineering analysis or cost data as with West Branch analysis. 2. Lack of engineering and cost data cited as main reason for reducing potential yield from this source; yet it is CDM/MDC's own decision not to deal with engineering or cost of ground sources in detail. 3. Elimination criteria used for aquifer sites are not substantive. For example, the first criterion (on the basis of which over 80% of the potential ground water sites are eliminated) is: yield of less than "3 or 4 mgd". But even 1 or 2 mgd is a relatively high rate of yield for any aquifer. 4. Where wells are too far from MDC system, wells could be used locally to reduce future MDC expansion needs.	Groundwater. 1. The IWSP reflects the Groundwater Feasibility Study of 1989 done by CDM which suggested 10-20 mgd may be available from the Glastonbury aquifer, subject to testing for volume and quality. The IWSP provides for a two-stage use of this potential source: 10 mgd to be brought on line in the late 1990's and an additional 8 mgd scheduled sometime after 2010. Use of groundwater is, in fact, the primary new source of water which MDC plans rely on.

MDC Strategic Planning Elements	DEP Comments	FRWA Comments	WRRC Comments	Approved MDC Individual Water Supply Plan
2. Groundwater (cont.)		constant doubt about its suitability. The MDC groundwater commitment is by definition limited in stating that it will pursue groundwater only "to the degree necessary to provide an assured 4-8 mgd". 4. Substantial coarse grained aquifers may lie under fine grain sediments and provide additional potential above the reported 39.8 mgd. Why is this not even considered by MDC? 5. MDC elimination rationale is inconsistent with the state's high priority for protection of aquifers and is inappropriate considering the MDC's quasi-public role. The rationale is "cost effectiveness based" yet the MDC does not show that groundwater development above and beyond 4-8 mgd is not cost effective. The 20 mgd West Branch diversion, however, is by MDC's own information, not cost effective.		

MDC Strategic Planning Elements	DEP Comments	FRWA Comments	WRRC Comments	Approved MDC Individual Water Supply Plan
3. Conservation (IV-6, 7; V-5, 6; Appen. B4 and E) 1. "Pilot" residential retrofit programs will be undertaken. 2. Industrial substitution is being pursued, starting with Pratt & Whitney, the MDC's largest user (6 mgd). 3. Efforts will be expended to "manage demand' in both residential and non-residential sectors (p. x). 4. Conservation programs will be vigorously pursued regardless of longer-term strategy implementation activities (p. IV-7).	1. MDC should set specific goals and then change demand projections accordingly. 2. Treat conservation as another water source and maximize before considering other alternatives (p. 2). 3. Plan should include substitution, cogeneration recycling, reuse, retrofit, water rate adjustment, & public education programs (p. 7). 4. Studies elsewhere show immediate savings possible (p. 10). In this case, 9 mgd easily (p. 12). Groundwater along the Connecticut River should be used before the Farmington (p. 2).	The Governor and legislature have made conservation state priority. As a large and quasi-public utility, the MDC should be a leader in water conservation. The MDC is capable but does not propose a specific program with schedule and budget to make water conservation a reality. A strong conservation commitment can be assured by specific mgd goals. The 9 mgd goal is achievable.	1. The impact of state initiatives, such as plumbing code changes should be factored into the Strategic Plan. 2. Plan say non-domestic conservation will be pursued, but not how.	Conservation. The IWSP outlines an assertive program which is already well underway. Through the IWSP, the District has stated a conservation goal of 6 mgd by 2030 which is 10% of 1989 (base year) usage. As previously pointed out, actual conservation results will lower the demand projection which will mean that new supply sources will be triggered later in the planning period.
4. Connecticut River (III-10, IV-7, V-13; Appen. A5, B4 , C3). Connecticut River was thoroughly evaluated as an original area of investigation for the strategic plan study. For legal reasons (prohibition of use of Class B waters), DOHS policy positions, and indications that State policies are not apt to change, the river has not been included as a drinking water source for the planning period ending in 2030. However, the Connecticut River has the potential to play a significant role in the MDC water supply strategy as a projected source of industrial quality water for large users.		MDC claims that 8 to 9 mgd of substitute water from the Ct. River can be developed (p. 6). This potential should be figured as a source.	Even under legal "use prohibition", the Connecticut River might, in effect, be tapped legally by drilling production wells in the flood plain.	

MDC Strategic Planning Elements	DEP Comments	FRWA Comments	WRRC Comments	Approved MDC Individual Water Supply Plan
5. West Branch Preservation (viii, ix, x, III-10). Preserve West Branch supplies to obtain up to 20 mgd (Plan p. III-10) from the West Branch (Colebrook Hogback system) within the confines of downstream requirements on the West Branch; promote, support and participate in efforts to establish a Farmington River management plan geared to evaluating various uses and needs of the West Branch to determine how multiple uses, including drinking water, can be compatible.	1. West Branch should be an alternative of last resort (p. 2). 2. Low flows in West Branch should not be reduced. 3. MDC should not use DEP emergency flow recommendation in its water supply planning (p. 8).	1. West Branch water "may be too limited", particularly considering the limits of the Farmington basin as a whole, to provide both consumption and other needs (p. 7). 2. The West Branch is not cost effective at 20 mgd or less and creates an economic pressure to divert greater levels. Diversion infrastructure once established, will easily allow for larger diversions and will be its very existence, greatly weaken any attempt to set or limit the degree of diversion.	1. West Branch is estimated to cost $4 million per mgd at 20 mgd; more per mgd at lesser amounts of diversion water. No other cost figures are provided in this plan, except for cost of treating Connecticut River water to an acceptable (potable) quality (which, coincidentally works out to approximately the same cost per mgd as development of the West Branch). 2. Downstream needs requirements are not clearly explicated (Appen. C1). 3. Extremely thorough and detailed treatment of this option is not replicated for any other options.	West Branch Preservation. To reiterate the West Branch figures into the IWSP as a back-up or last resort and also to be reserved as a possible regional source for the post 2030 period; the need for additional water may not peak until then. Its preservation for possible use as a regional drinking water resource is clearly prudent and beneficial to all interests because while it is so designated, water quality will be uppermost and development of the watershed will be forestalled.
6. Summary of potential sources and scheduling. East Branch modifications: all needs can probably be met to 2010 by lowering minimum pool 10 feet (to 480 feet) at Barkhamsted and (to 445 feet) at Nepaug and activating Lake McDonough for use in non-recreational season (10 mgd).	East Branch modifications: agree with 10 mgd estimate (p. 7).	East Branch modifications: agree with estimate of 10 mgd (p. 9).	East Branch modifications: at least 3 mgd could be added by reducing Barkhamsted to 460 feet from MDC's recommended level of 480 feet.	

MDC Strategic Planning Elements	DEP Comments	FRWA Comments	WRRC Comments	Approved MDC Individual Water Supply Plan
Groundwater: Groundwater sources will be actively pursued with the expectation that between 4 and 8 mgd can be obtained as part of future supply; adjust estimate of yield as additional aquifer research is completed.	Groundwater: Goal should be 14-15 mgd (p. 9).	Groundwater: Goal should be 15 mgd (p. 4) with 5 mgd by 1992 (p. 4), 10 mgd by 2010 and 15 mgd by 2030 (p. 9).	Groundwater: The Strategic Plan does not consider engineering feasibility of implementing groundwater.	Groundwater. The goal of the IWSP is 18 mgd of groundwater by 2030. MDC has already begun feasibility studies and the IWSP layout a specific program for exploration and testing.
Conservation & Ct. River: conservation in the form of demand management will be actively pursued in both residential and non-residential sectors. Conservation goals have not yet been incorporated into the Strategic Plan. Upon completion of domestic pilot programs and further program development among larger users, such estimates can be incorporated in the Plan. The CT River will be pursued as "industrial conservation" in the form of use of River water as a substitute for MDC's supply.	Conservation & Ct. River: 4 mgd substitution water should be part of plan (p. 12). Also add 5 mgd for minimum conservation making 9 mgd total by 2030 (p. 12). All calculations should be redone after setting these goals (p. 7).	Conservation & Ct. River: Goal should be at least 9 mgd as a combination of the Connecticut River and water Conservation (3 conservation and 6 CT River) (p. 7). There could be 15% savings from building code changes or 8.4 mgd additional (p. 7). At least 9 mgd by 2030 (p. 9). The combination of 15 mgd groundwater and 9 mgd from conservation would give MDC a 12 mgd margin over its own estimate of 2030 demand (p. 9).	Conservation & Ct. River: 1. The adoption of upper bound and high likely scenarios totally discounts the feasibility of using conservation to meet future demand. 2. If it is "dangerous" to depend on conservation, it is dangerous to depend on anything, including West Branch diversion. In a democracy, both conservation and new source implementation depend on preferences and acceptance by water consumers. 3. Conservation and Ct. River options are not a substantive part of the Strategic Plan because no specific goals for them have been incorporated into the Plan's calculations.	Conservation & Ct. River: The IWSP target a 6 mgd reduction in consumption due to conservation and source substitution by 2030. If conservation proves more effective, the tapping of new supplies will be postponed accordingly. Conservation is not only a substantive part of the plan, it is a major strategy element.

MDC Strategic Planning Elements	DEP Comments	FRWA Comments	WRRC Comments	Approved MDC Individual Water Supply Plan
West Branch: should be preserved and reserved as part of the Connecticut Plan process for possible regional use after 2010.	West Branch: 1. It is clear that East Branch augmentation, groundwater and conservation can carry the MDC system through 2030 without the West Branch (p. 2). 2. However, this conclusion should be updated every 3 to 5 years (p. 3). 3. MDC should delineate expected service expansions (p. 16). 4. The West Branch should be considered a source of last resort only (p. 8).	West Branch: 1. MDC should consider diversion as a last resort and relegate the West Branch to a backup role only (p. 7). 2. Since uncertainty seems to be the major reason for discounting the groundwater option, why is not the same reasoning applied to diversion from the West Branch? (e.g., a possible prohibition of diversion by DEP or Congress place that source in a state of uncertainty as great as, for example, the possible future polluting of ground water) (p. 9).	West Branch: The calculation showing a possible need for 20 mgd by 2030 doesn't appear justified for following reasons. 1. The Strategic Plan itself predicts sufficient supply from the East Branch to meet all demands to 2010. 2. Domestic demand after 2010 is not expected to exceed 5 mgd (Appen. B2, p. 18). 3. The Strategic Plan doesn't provide data sufficient to justify prediction of an increase in non-domestic demand (e.g. see comments above on non-domestic demand, p. 5). This "planning deficit' of 5 mgd can be obtained from any one of several sources including New Britain saturation, groundwater, and conservation, as well as the West Branch. The claim that the West Branch must be reserved as a requisite supply source is therefore no more justified than reservation of these other options, unless it can be shown that the West Branch is a preferred option for reasons of cost or other variables. The Strategic Plan does not demonstrate that the West Branch has compelling advantages to justify its choice as preferred.	West Branch. The MDC's IWSP for the period extending to 2030 considers diversion as a last resort and relegates the West Branch to a back-up role. Its use is anticipated only if groundwater yields prove to be disappointing and actual demand justifies accessing new sources. In short, MDC expects to get by without use of the West Branch before 2030 unless other aspects of the plan turnout to be overly-optimistic. It is therefore a back up, a contingency source for the planning period and a regional source for the future beyond the planning horizon.

MDC Strategic Planning Elements	DEP Comments	FRWA Comments	WRRC Comments	Approved MDC Individual Water Supply Plan
6. Summary (cont.)				
West Branch (cont.)			Furthermore, if the Strategic Plan is correct that population saturation will occur by 2030, then the West Branch will not be required after 2030 either. That is to say, it does not appear likely that the West Branch will be required for future water supply in the Hartford Metropolitan area.	

YOUR LAND HAS BEEN

STOLEN!!

Learn how our government has come like a thief in the night and taken our land without us even knowing it has happened.

MEETING OF: Friends of the Rivers
Otis Elementary School
Wednesday, December 4, 1991
7:00 p.m.

For further information call: 258-3336
258-4800
258-4472

TOLLAND LAND OWNERS

BEWARE!

At present, you have been or are about to be swindled out of your land and homes by the largest land GRAB in Southwestern New England. The Scenic River Study has been exposed as a lion in lambs clothing. This is not aimless rambling or foolish talk, but a prediction backed up by documentation and the past record of our government.

To learn the facts, attend the meeting of "Friends of Rivers" at the Otis Elementary School, 7 p.m. on Wednesday, December 4, 1991.

FRIENDS OF THE RIVERS

"FOR YOUR CONSIDERATION"

What We Have Been Told!

Become designated Wild and Scenic and we will protect the river from dams and pollution. Nothing will change. You will control the river with local authority forming your own rules and regulations.

What We Have **NOT** Been Told and What We Will Get!

Law 1281
Any component of the National Wild and Scenic Rivers System shall be administered by the Secretary of the Interior through the National Park Service and shall become part of the National Park System.

Law 1271
Nothing shall preclude the use of **condemnation** when necessary to get title or easements to river property.

Law 1277
The secretary of the Interior shall issue guide lines of the standards for local zoning which are consistent with the purpose of the act. Failure to up hold these standards will result in condemnation. (There goes Self Management)

Law 1272
Additional land may be added to the system from time to time.

Law 1275
The boundaries of **any** river in the Wild and Scenic system shall be 1/4 mile from the high water mark on each side but **not** limited to areas which may lie more than 1/4 mile from the high water mark.

Law 1283
The Secretaries of the Interior or Agriculture **has** the **jurisdiction** over any lands which include, border upon, or are adjacent to any river in the National Wild and Scenic River System or are UNDER CONSIDERATION for such inclusion.

HC 66 BOX 143 SANDISFIELD MA 01255

Law Sect. C of Sect. 10 of PL 99-590
Becoming designated Wild and Scenic automatically make us a National Wildlife **Refuge** .

Law Sect. 16 A of PL 99-530
The definition of Rivers is a flowing body of water or estuary or a section, portion or **tributary** thereof, including rivers, streams, creeks, runs, kills, rills and **small lakes**.

Think back and remember if any one who promotes or desires designation ever mentioned any of these laws, all of which may be found in your local library. Once the government is given the power to do something it does it and more so. Our government s past and present record around this country is ample proof of what they can and will do. Their statement of " this is a different situation" holds no water, as the same laws apply to ALL situations.

This enticement by the National Park Service to become Wild and Scenic is very similar to the drug dealer who says, "Just try the harmless white powder, it won't hurt you, and it sure will make you feel good."

If You Want To Get Involved - Start Here!
Your *help* is urgently needed.
We need people to write letters & articles, attend hearings, do mailings, and make phone calls!
We need your contributions to help pay for mailings, action alerts, phone bills and advertisements.
WON'T YOU HELP?

Name _____
Address _____
City, State, Zip _____
Phone (Bus.) _____ (Home) _____ (Fax) _____
Contribution: $5 $10 $15 $20 Other _____

Mail completed form to F.O.R. HC66 Box 143, Sandisfield, MA 01255

Laws taken from Wild & Scenic Rivers act, public law 9542, October 2, 1968 and amended by PL 99-590 October 30, 1986

1/8/92

Dear Sandisfield Resident:

As your representative on the Farmington River Study Committee, I have decided to write to all of the people of our town one last time before the Public Forum on January 13.

You have recently received a question and answer format from the National Park Service. This is the Government's official stand on all the concerns you have been hearing about. You must read this carefully to find out what they have to say. You have also, recently, heard from the Farmington River Watershed Assoc. Inc. This is a group made up, by and for the people in the Farmington River Valley. They speak very strongly to issues concerning our river in our town. You have also received many letters recently which have nothing to do with the Farmington River. Letters about horror stories that have taken place elsewhere in the country. Letters that intend only to put fear into Sandisfield people. Letters talking about "Greenway Refuge Parks, National Parks, coercive preservationists and professional preservationists". This is another obvious scare tactic to confuse people about what is happening right here at home, or to make people think that there is something hidden in the Farmington River Study that our people are not hearing about.

The truth is that I was asked by our Selectmen to sit on the Farmington River Study Committee. I was chosen because of my six years of formal education in Natural Resource Management and my background in environmental studies. I am not a Federal Govt. employee. I don't work for the MDC. I am not a member of any environmental group. I am especially not a professional preservationist. My ideals conflict strongly with preservationists

What I am is a Sandisfield resident and landowner. I am against Federal control of private land. I am so against it, that I would lead any fight, to make sure this could never happen to our people in our town. For the past three and a half years I have done what I was asked to do. I studied this issue and learned what wild and scenic designation means to our town, our people, and the Farmington River.

I learned that the Farmington River is a very special resource. I have learned there is a very real threat of diversion for Hartford's future water supply needs. The river is also vulnerable to hydro projects and dams. Sandisfield has already once felt the pain from the installation of the Colebrook River Dam. I have learned that the best and only way to protect against these threats are through wild and scenic designation.

I have learned we could have this protection without Federal control of private land. I learned we could get this protection by making sensible choices about river protection through our own planning and zoning board. What has happened elsewhere in the country, in the past, is not what the Farmington River Study is about. It is unprecedented. It will not be designated unless everything I tell you is true. Protection against Gov't control will be built right into the legislation when we ask Congress for wild and scenic designation.

These are not my opinions. This is not the way I feel. This is what I have learned. This is what I am relating to the people of my town, because they asked me to. It makes no sense to give you unrelated horror stories about things that have happened elsewhere in the country. I can find you many of these. What is important is what is happening on our river, in our town, right now. I tell you we will not go to Congress unless it is permanently impossible for Federal control of private land on the Farmington River.

My children always ask me how we could have polluted so much air and water, why we have an out-of-control waste problem and why we are such a global environmental mess. I tell them that it is terrible, and that we are trying now to change this. I have no other response for them.

Right here, right now, in our town we have an opportunity to prove to the children that we care about our water and that we are going to do something to protect it. Will they thank us for what we have done here in Sandisfield or be bitter because we made a decision based on fears that were not even related to this issue? I ask you to come to the Public Forum at the Otis Consolidated School at 7PM on January 13. Any fear you now have can be put to rest at this time. If you attend, you will not walk away wondering who is right or who you should listen to. You will be able to make an independent decision based on what you learned at this forum.

Robert Tarasuk
Farmington River Study Committee
Sandisfield Representative

RT/st

Citizens of Sandisfield, MA

January 25, 1992

℅ Mr. Bob Tarasuk
P.O. Box 6
Sandisfield, MA 01255

To the Concerned Citizens of Sandisfield,

I have been approached by both proponents and opponents (Friends of the River) of your involvement in the Farmington River Wild & Scenic River Study in their effort to assess the impact which designation might have on your community. I feel compelled to respond to you directly because my experience with the process may shed some light on the direction you choose to take in your upcoming vote on Wild & Scenic.

The story of the Wildcat River and the Town of Jackson, NH has no doubt been repeated in text, video, and discussion in your community. For those of you who have not been exposed, a brief synopsis should suffice. Jackson is a small community of 600+ in northern NH which has evolved from a rural/ agricultural economy of the 1800's to the present tourism-based economy without losing the trappings and atmosphere of the former. Indeed, the strong suit of Jackson has been the asset of its surrounding geography....its natural resources. In the early 1980's a group of developers, with the support of the Federal Energy Regulatory Commission (FERC) proposed construction of a hydropower facility at Jackson Falls on the Wildcat River. Jackson Falls is in the center of the village and has served as a calling card to visitors and residents alike since the town was built. The hydro proposal carried with it the power of eminent domain through which access to the Falls could have been denied. The citizens of Jackson were up in arms but responses to the proposal were thwarted at every level of bureaucracy. Finally, with the help of our two U.S. Senators, our pleas were heard. Through Act of Congress a moritorium was placed on licensing projects on the Wildcat for a proscribed period during which the citizens of Jackson could decide the course of action they wished to take. At the same time the Act funded a study of the Wildcat River to determine its suitebility and eligibility for inclusion in the National Wild & Scenic Rivers System. Because federal funds were involved, the National Park Service was named as the lead agency in the river study.

If you have read this far, you are truly a concerned citizen. Among the first information to come to Jackson regarding Wild and Scenic protection was a book called Flowing Free which described in detail the provisions of the Wild and Scenic Rivers Act of 1968. Upon reading the provision for the establishment of river corridors through the purchase of lands, so many acres per mile, etc., etc., being a riparian landowner I became very concerned with the direction of this process. One of the first valuable contributions of the National Park Service representatives was to create a forum of dialogue through which concerns such a mine could be accurately addressed. The language of the original Act was written to address needs along our large western rivers where the land ownership pattern is very different from here in the East. Typically, the land is already public or owned by large corporations. Essentially, the River Study Act for the Wildcat amended and rewrote the 1968 Act by addressing the needs of smaller rivers and specifically excluding purchase of private lands. The River Study legislation also directed the Town of Jackson to evaluate other possibilities of resource protection. The National Park Service served as a clearing house for information on resource management around the country. At no time did they mandate specific actions Jackson would have to take to qualify for Wild & Scenic protection. We were left to examine our existing zoning and Master Plan to evaluate their effectiveness in protecting our resources and preserving the rural character of the Town. Local citizens determined that our Master Plan addressed the need for protection but our zoning ordinances fell short of this goal. Our Board of Selectmen and Planning Board proposed amendments to our zoning to address these shortcomings.

At the time of our river study, the State of New Hampshire had no river protection program and no other direction would supercede the power of FERC to follow their mandate of supporting energy development. The only viable means for us to oppose this mandate was for the citizens of Jackson to voice their support for Wild and Scenic designation at Town Meeting in 1988 and offer as a demonstration of good faith the adopted zoning amendments. The rest is history.

Now, to your concerns. The Wildcat River still flows freely over Jackson Falls and the zoning changes are working. Property values have not dropped as a result of designation nor has there been an increase in visitation and attendant problems. There is no longer a National Park Service presence in Jackson. Public lands in the Wildcat watershed are managed by the USDA National Forest Service (White Mountain National Forest) as they have since

the early 1990's. Private landholding are subject to provisions of local government, as they are in Sandisfield, and are overseen by the efforts of the Board of Selectmen, the Planning Board, and the Conservation Commission. The Wild & Scenic designation legislation provided for the creation of an advisory river commission consisting of members of these agencies and also including riparian landowners. The weight of the membership vote falls to the Town of Jackson. I serve on the advisory commission and also on the Jackson Conservation Commission. My work is in general contracting and I have not felt or observed any negative impact arising from designation. There are no hidden agendas and most Jackson citizens would report that Wild and Scenic designation has been a very positive experience. However, for myself, getting there was not half the fun. The local people involved in the study process were required to sacrifice many days and evenings... work time...family time...to make this project work. There were many obstacles to overcome. Not everyone is pleased with change, but this was a community project and everyone had an opportunity to participate and voice their concerns.

In the case of Sandisfield, as an outsider let me be the last to suggest the proper direction for you to take. It is your decision. Wild and Scenic designation for your segment of the Farmington River can certainly be a useful tool for protecting that resource and maintaining the character of your community for future generations. Designation will not bring on the worst case scenarios which apparently the Friends of the River have chosen to believe and spread around your community. Representatives of this group visitied with me in Jackson to learn more of this process but I suspect my comments fell on deaf ears. The federal government will not take control of private lands. They have no jurisdiction. Rather, federal law gives this power to state governments which in turn have transferred this power to local governing bodies through the concept of zoning. This is to say that even with designation of your river, your local government will have jurisdiction over private landholdings. Local government is you. I am not familiar with your local land use regulations. Perhaps they are adequate. If there are needed changes such as increased set-backs or building restrictions, they can be developed and adopted through your town meeting process. This is a wonderful civics lesson and a remarkable opportunity for the citizens of Sandisfield to provide a legacy for the future. In a small town there are no throw-away votes...every one counts.

George J. Bordash

Jackson, NH

FARMINGTON RIVER SURVEY RESULTS

Total Survey Results

11/7/91

The Farmington *Landowner and Resident Questionnaire* was developed by the Farmington River Study Committee and sent to every resident (via postal customer) in the towns included in the Farmington Wild and Scenic River Study: Becket, Otis, Sandisfield and Tolland in Massachusetts, and Hartland, Colebrook, Barkhamsted, New Hartford and Canton in Connecticut. There were a total of 645 responses to the survey. [Note: n = number of responses for a given question when different from 645.]

QUESTION #1 Where is your primary residence (where you live 6 months or more)?

Becket	=	13	(2%)
Otis	=	36	(5%)
Sandisfield	=	12	(2%)
Tolland	=	8	(1%)
Colebrook	=	29	(4%)
Hartland	=	67	(10%)
Barkhamsted	=	120	(19%)
New Hartford	=	149	(23%)
Canton	=	211	(33%)
Total	=	645	

QUESTION #2 Prior to receiving this questionnaire, had you heard about the Wild and Scenic Study of the Farmington River that is being conducted by the Farmington River Study Committee and the National Park Service? [n=640]

Yes = 533 (83%)
No = 107 (17%)

If yes, where did you receive your information?
[Listed in order of highest to lowest response]

Newspaper	=	404	(63%)
Study Q&A handout	=	237	(37%)
Other Study info	=	162	(25%)
Friend	=	130	(20%)
Attended meeting	=	96	(15%)
Other	=	49	(8%)

QUESTION #3 How do you or members of your family use the Farmington River corridor? [Listed in order of highest to lowest response for "Frequent Use"] [n=568]

Activity	Frequent Use	Occasional Use	No Use
wildlife appreciation	329 (58%)	195 (43%)	44 (8%)
hiking	190 (33%)	236 (42%)	117 (21%)
fishing	169 (30%)	175 (31%)	181 (32%)
picnicking	115 (20%)	239 (42%)	140 (25%)
photography	113 (20%)	204 (36%)	151 (27%)
swimming	92 (16%)	177 (31%)	191 (33%)
canoeing or kayaking	73 (13%)	195 (34%)	198 (35%)
other	52 (9%)	7 (1%)	32 (6%)
tubing	46 (8%)	226 (40%)	196 (35%)
X-C skiing	41 (7%)	105 (18%)	278 (49%)
hunting	31 (5%)	25 (4%)	337 (59%)
camping	25 (4%)	108 (19%)	286 (50%)
snowmobiling	14 (2%)	25 (4%)	345 (61%)

QUESTION #4 Please indicate how important you feel it is to encourage or discourage the following uses and activities in the upper Farmington River Valley. [Listed in order of highest to lowest response for "strongly encourage" and "encourage." NOTE: responses are lumped into three categories below.] [n=653]

River Use	Encourage	Neutral	Discourage
protect water quality	631 (98%)	9	4 (1%)
protect free-flowing	620 (96%)	21	9 (1%)
fishing	584 (91%)	59	7 (1%)
fishery management	579 (90%)	52	13 (2%)
canoeing	533 (83%)	95	19 (3%)
tubing	396 (61%)	146	106 (16%)
flood control	264 (41%)	217	157 (24%)
hydroelectric dev.	113 (18%)	116	404 (63%)
future water supply	69 (11%)	182	379 (59%)
sewage transportation	35 (5%)	51	404 (63%)
sand and gravel	30 (5%)	97	515 (80%)
Adjacent landuse			
conserve wildlife habitat	639 (98%)	10	4 (1%)
conserve forest land	637 (98%)	8	12 (2%)
conserve scenic qualities	636 (98%)	10	3 (1%)
conserve rural character	612 (94%)	21	16 (2%)
conserve historic resources	607 (93%)	34	9 (1%)
outdoor recreation	522 (80%)	92	30 (5%)
protect landowner rights	465 (71%)	158	21 (3%)
maintain local control	448 (69%)	130	40 (6%)
tourism	291 (45%)	233	119 (18%)
residential development	77 (12%)	134	444 (68%)
population growth	53 (8%)	171	433 (66%)

industrial development	23 (4%)	44	581 (89%)
other	23 (4%)	7	5 (1%)
commercial development	22 (3%)	134	444 (68%)

QUESTION #5 Do you think growth and development are threatening the natural, scenic, historic and recreational resources of the upper Farmington River Valley?

Yes = 470 (74%)
No = 60 (9%)
Undecided = 104 (16%)

Threats [listed in order of highest to lowest response]

1) water pollution	337	(52%)
2) growing population	325	(50%)
3) commercial development	323	(50%)
4) residential development	313	(49%)
5) industrial development	289	(45%)
6) loss of rural character	284	(44%)
7) loss of scenic character	244	(38%)
8) loss of forests	216	(33%)
9) too much tourism	116	(18%)
10) other	28	(4%)
11) too much recreation	19	(3%)

QUESTION #6 Do you think efforts to conserve natural, scenic, historic and recreational resources are threatening growth and development in the upper Farmington River Valley?

Yes = 46 (7%)
No = 509 (79%)
Undecided = 87 (13%)

QUESTION #7 Please indicate how you feel about the following land use options for protecting the critical resources of the upper Farmington Valley. [Listed in order of highest to lowest response for "strongly support" and "support." NOTE: responses are lumped into three categories below.]

Protection tool	Support	Neutral	Oppose
require set back for new development	601 (93%)	29	15 (2%)
restrict timber cutting near river	592 (92%)	34	12 (2%)
require vegetative screening	573 (89%)	53	11 (2%)

Protection tool cont.	Support	Neutral	Oppose
height limitations on new structures	545 (85%)	80	12 (2%)
stronger restrictions for building in 100 yr f.p.	542 (84%)	72	18 (3%)
state or town acquisition of key parcels	538 (83%)	62	36 (6%)
zoning to low density districts abutting river	529 (82%)	65	28 (4%)
stronger enforcement of existing regulations	514 (80%)	88	11 (2%)
voluntary donation of conservation easements	488 (76%)	99	26 (4%)
other	19 (3%)	4	1 (<1%)

QUESTION # 8 What group(s) do you think should be responsible for protecting the natural, scenic, historic and recreational resources of the upper Farmington River Valley? [Listed in order of highest to lowest response for "yes"]

	Yes	No	Unsure
conservation group	494 (77%)	47 (7%)	46
representative commissn.	469 (73%)	49 (8%)	75
town government	446 (69%)	83 (13%)	66
local land trust	429 (67%)	61 (9%)	95
state government	411 (64%)	107 (17%)	66
landowners	383 (60%)	108 (17%)	89
federal government	344 (53%)	156 (24%)	82
private business	202 (31%)	270 (42%)	70
other	21 (3%)	3 (3%)	6

QUESTIONS FOR LANDOWNERS ONLY

QUESTION #9 In which of the upper Farmington River Valley towns do you own land? [n=493]

Becket	= 5 (1%)	Hartland	= 49 (9%)
Otis	= 31 (6%)	Colebrook	= 29 (6%)
Sandisfield	= 8 (2%)	Barkhamsted	= 98 (20%)
Tolland	= 9 (2%)	New Hartford	= 97 (20%)
		Canton	= 167 (34%)

Total Landowners = 493

QUESTION #10 Approximately how many acres in total do you own in the towns listed above? [n=493]

1. less than 1 acre	=	102	(21%)
2. 1-10 acres	=	316	(64%)
3) 10-50 acres	=	49	(9%)
4) more than 50 acres	=	23	(5%)
5. not sure	=	7	(1%)

QUESTION #11 How is your land used? [listed in order of highest to lowest responses] [n=493]

1) residence	=	467	(95%)
2) undeveloped open space	=	87	(18%)
3) other recreation	=	71	(14%)
4) timber management	=	31	(6%)
5) wildlife management	=	30	(6%)
6) rental housing	=	15	(3%)
7) hunting trapping	=	18	(4%)
8) secondary vacation	=	14	(3%)
9) retail commercial	=	13	(3%)
10) real estate invest.	=	7	(1%)
11) industrial	=	3	(1%)
12) tourism (restaurant)	=	2	(<1%)

QUESTION #12 Does any of your land include frontage on the Farmington River? [n=493]

Yes = 84 (17%)
No = 409 (83%)

QUESTION #13 Why did you choose to own land in the upper farmington Valley? [listed in order of highest to lowest responses.] [n=493]

1) pleasant rural community	=	402	(82%)
2) natural surrounding and tranquility	=	387	(78%)
3) good place to raise children	=	261	(53%)
4) recreational opportunities	=	243	(49%)
5) wanted to live near a river	=	144	(29%)
6) Easy access to work	=	110	(22%)
7) land in area is a good investment	=	106	(22%)
8) family has always lived here	=	84	(17%)
9) other	=	60	(12%)
10) favorite vacation place	=	36	(7%)
11) good location for my business	=	33	(6%)
12) job opportunity	=	22	(4%)

Congress of the United States
House of Representatives
Washington, D.C. 20515

January 13, 1992

Dear Farmington River Valley resident:

We are aware that there has been considerable discussion in recent weeks about the potential effects of designating the West Branch of the Farmington River as a wild and scenic river on the communities through which the river flows. We believe that this dialogue is positive and ultimately will be beneficial both to area residents and the river. As your elected representatives to the U.S. Congress who would be responsible for introducing legislation to designate the river, we believe we should clarify our position on this important issue.

We consider the Farmington River to be one of the region's most important natural resources. The river is a defining feature of the area's scenic character. It supports an impressive diversity of plant and animal species, offers a broad range of recreational opportunities, and is an integral part of daily life in the valley. The Farmington River clearly is worthy of protection.

Of equal importance is the fact that the vast majority of land along the river is privately owned. This, too, is a defining feature of the Farmington River Valley. In the past, the threat of federal acquisition and management of private land associated with wild and scenic designation has often created controversy. Precisely because of that history, the Farmington Wild and Scenic River Study was specifically tailored to encompass a new approach, founded on maintaining the traditions of private land ownership and local authority while removing any consideration of federal acquisition and management from the study process. Throughout the study, the National Park Service and Farmington River Study Committee have demonstrated their commitment to this approach, and this commitment is articulated in the detailed question and answer handout recently distributed by the Park Service.

For the Farmington River to be designated a wild and scenic river, a new law must be adopted by Congress. The principal effect of this law would be to restrict federally assisted water projects that would degrade the river. While we appreciate the significance of the Farmington River and would welcome the opportunity to sponsor legislation to ensure its long-term protection, we will initiate this action only if there is a strong indication of local support. We will measure local support through two principle indicators: Town Meeting votes endorsing designation; and, a demonstration of town commitment

to protect the river through effective local control, such as a river protection overlay district.

In keeping with the philosophy of maintaining private ownership and local control, legislation that we may propose to designate the Farmington River as a wild and scenic river will include the following provisions:

1. There will be no land acquisition by the federal government.

2. Control over the use of lands along the Farmington River will remain the responsibility of local government. There will be no federal land management.

3. Federal presence in the Farmington River Valley will not be increased as a result of designation. No new federal permits will be required, and the river area will not become a component of the National Park system or be subject to the federal regulations governing lands in the system.

If, after legislation is introduced, any efforts are made to weaken or remove these provisions, we would withdraw the bill from further consideration.

To reiterate, we believe that the Farmington River deserves strong protection, but we remain convinced that this can only be achieved through a mechanism that will ensure the continuation of private land ownership and local authority over land use along the river. Federal acquisition and management of land are inappropriate and unacceptable given these long-standing traditions of the Farmington River Valley. We pledge our assurance that no legislation concerning the Farmington River will go forward that violates these principles. We look forward to working with the many interests involved to achieve a solution that will integrate both conservation of this important resource and the legitimate concerns of landowners and residents of the riverfront communities.

Very truly yours,

Nancy L. Johnson
Member of Congress

John Olver
Member of Congress

SAMPLE TOWN MEETING RESOLUTION SUPPORTING WILD AND SCENIC RIVER DESIGNATION
PASSED BY THE CONNECTICUT STUDY AREA TOWNS

Resolution that the Farmington River be designated as a Wild and Scenic River for a hearing of the Town of Barkhamsted on Wednesday, September 26th,1990.

Resolved

Whereas: The Farmington River flows through the Town of Barkhamsted, Connecticut, and is a natural resource of great importance to the Town and the State of Connecticut.

Whereas: The quality and quantity of its water are essential and intrinsic to the maintenance and enhancement of wildlife, fisheries, recreation, ground water supplies and the physical beauty of the landscape.

Whereas: The National Park Service has determined that the Farmington River is eligible for Wild and Scenic River designation based on its outstanding fisheries, wildlife, recreational and historic values.

Whereas: The people of Barkhamsted recognize the importance of this irreplacable natural asset and hereby express a commitment to the protection and preservation of the Farmington River corridor and the outstanding values identified in the Wild and Scenic River Study.

Whereas: The Town of Barkhamsted, the Farmington River Study Committee and the National Park Service are working cooperatively to develop an effective locally-based plan that will ensure the necessary protection of the river and its related resources.

Whereas: The Wild and Scenic River Designation would provide further protection of the river and yet would afford local control and regulation by such towns committed to the protection of the Farmington River.

Therefore: Be it resolved that the people of the Town of Barkhamsted petition the Congress of the United States of America that the Farmington River be designated as a Wild and Scenic River with the understanding that such designation would be based on the locally-developed river conservation plan and would not involve federal acquisition or management of lands.

Therefore: Be it further resolved that the townspeople urge our elected officials to consider and, wherever appropriate, to adopt additional local measures that will strengthen the Town's protection of this critical resource.

House Bill No. 6925

PUBLIC ACT NO. 93-256

AN ACT CONCERNING THE ATLANTIC STATES MARINE FISHERIES COMMISSION, FREE FISHING, HUNTING AND TRAPPING LICENSES FOR DISABLED PERSONS AND PERSONS SIXTY-FIVE YEARS OF AGE AND OLDER, THE DESIGNATION OF THE FARMINGTON RIVER AS A WILD AND SCENIC RIVER AND THE STATE GEOLOGICAL AND NATURAL HISTORY SURVEY SALES AND PUBLICATION ACCOUNT.

Sec. 3. Section 24-3 of the general statutes is repealed and the following is substituted in lieu thereof:

(a) Said commissioner shall cause to be prepared a report to the general assembly before each regular session of the same in the odd-numbered years, showing the progress and condition of the survey, together with such other information as he deems useful or as the general assembly requires. The regular and special reports of the survey, with illustrations and maps, shall be [prepared for publication, and, when printed, the reports] PRODUCED FOR PUBLIC USE AND shall be distributed or sold by the commissioner as the interests of the state and of science may demand.

(b) There is established a separate account within the general fund, to be known as the state geological and natural history survey sales and publication account, for the purpose of providing moneys for [the printing] PRODUCTION of [survey] ENVIRONMENTAL publications and purchase, for resale, of related [maps and reports] MATERIALS AND PRODUCTS. All moneys obtained from the sale of such publications, [maps and reports] MATERIALS AND PRODUCTS shall be paid to the state treasurer and credited to said account and the commissioner may expend moneys of said account for the [editing and printing] PRODUCTION AND DISTRIBUTION of such publications and the purchase, for resale, of such [maps and reports. Any moneys in excess of thirty thousand dollars remaining in said account at the close of any fiscal year shall revert to the general fund] MATERIALS AND PRODUCTS.

Sec. 4. (NEW) (a) It is declared to be the policy of the state of Connecticut that the portion of the Farmington River which is the subject of the authorized study by the Farmington Wild and Scenic River Study Committee for purposes of designation as a national wild and scenic rivers system be preserved as provided for in the federal Wild and Scenic Rivers Act, Public Law 90-542, as amended.

(b) The commissioner of environmental protection shall cooperate with all relevant federal, state and local agencies to provide for such designation and to implement any management plan developed in accordance with the Wild and Scenic Rivers Act. Upon the designation of the river segment by Congress, the commissioner shall notify the joint standing committee of the general assembly having cognizance of matters relating to the environment regarding any statutory changes necessary to implement the preservation and conservation of the river segment in accordance with the federal Wild and Scenic Rivers Act. The commissioner shall cause a copy of this section to be delivered to all United States Representatives and Senators representing Connecticut in the Congress of the United States.

Sec. 5. Section 26-28 of the general statutes is repealed and the following is substituted in lieu thereof:

(a) Except as provided in subsection (b), the fees for firearms hunting, archery hunting, trapping and sport fishing licenses or for the combination thereof shall be as follows: (1) Resident firearms hunting license, ten dollars; (2) resident fishing license, fifteen dollars; (3) resident combination license to firearms hunt and fish,

FARMINGTON RIVER ANGLERS ASSOCIATION

Since 1977 our club has been actively involved in the stewardship of the Farmington River. From small actions such as trash cleanup, to large actions such as sponsorship of the Shaw-Gates riverfront property acquisition; our 15 year history has been a testament to the protection of a vital resource. During the past two decades our small state has witnessed a quantum growth of civilization. Vast areas of open space have been swallowed up by condominium developments, roads, commercial buildings, and shopping malls. For various reasons this growth has placed increasing demand on our remaining open spaces and water resources. The F.R.A.A. has gained much wisdom in its short life, and we have come to the understanding that future stewardship of the Farmington River must come from an authority much greater than any one club or group can provide. The source of this authority can be the provisions of the Wild and Scenic Rivers Act, and we urge the adoption of this status for our home river.

From a purely angling perspective, the area proposed for Wild and Scenic designation has come into national prominence as one of the premier trout waters of the eastern United States. It has received national attention in magazines such as "Fly Fisherman". The Trout Management Area of the Farmington River has flourished to the point where it has just been expanded to handle the traffic jam of fishermen. In recent times this area has been fished by visitors from all across the country and as far away as Japan. This angling tourism has directly benefited the local economy of the study area. But it must be recognized, however, that the high quality of the fishery comes from the benefits of having class B water quality and open spaces along the rverfront. The best insurance policy for the future of the angling populace and the resident trout is the adoption of Wild and Scenic status for the river.

In the greater environmental perspective, we have come to see the oasis that the river corridor has become for numerous species of plants, birds, and mammals. We have observed many of them in our time spent on the river, and believe that Wild and Scenic designation will provide a needed cushion of protection. At the same time we recognize the historical rights of property owners along the river corridor; and hope that they will see the provisions of the act as an ally rather than an imposition.

In closing, we trust that our statement will serve to reaffirm the F.R.A.A.'s commitment to the Farmington River and to its designation as Wild and Scenic. More importantly, we trust that Wild and Scenic designation will help to establish a legacy for our children which will allow them to feast upon the same beauties of the Farmington River which we are all now privileged.

Respectfully submitted,

Stephen B. Lewis, president

"Search out and feast upon
the ensuing beauties
of the Farmington . . ."
The Rev. J.B. McLean 1895

An Active Member Club of the Federation of Flyfishers

Public Law 103-313
103d Congress

An Act

To designate a portion of the Farmington River in Connecticut as a component of the National Wild and Scenic Rivers System.

Aug. 26, 1994
[H.R. 2815]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Farmington Wild and Scenic River Act.
16 USC 1271 note.

SECTION 1. SHORT TITLE.

This Act may be cited as the "Farmington Wild and Scenic River Act".

SEC. 2. FINDINGS.

The Congress finds that—

(1) Public Law 99-590 authorized the study of 2 segments of the West Branch of the Farmington River, including an 11-mile headwater segment in Massachusetts and the uppermost 14-mile segment in Connecticut, for potential inclusion in the National Wild and Scenic Rivers System, and created the Farmington River Study Committee, consisting of representatives from the 2 States, the towns bordering the 2 segments, and other river interests, to advise the Secretary of the Interior in conducting the study and concerning management alternatives should the river be included in the National Wild and Scenic Rivers System;

(2) the study determined that both segments of the river are eligible for inclusion in the National Wild and Scenic Rivers System based upon their free-flowing condition and outstanding fisheries, recreation, wildlife, and historic values;

(3) the towns that directly abut the Connecticut segment (Hartland, Barkhamsted, New Hartford, and Canton), as well as the Town of Colebrook, which abuts the segment's major tributary, have demonstrated their desire for national wild and scenic river designation through town meeting actions endorsing designation; in addition, the 4 abutting towns have demonstrated their commitment to protect the river through the adoption of "river protection overlay districts", which establish a uniform setback for new structures, new septic systems, sand and gravel extraction, and vegetation removal along the entire length of the Connecticut segment;

(4) during the study, the Farmington River Study Committee and the National Park Service prepared a comprehensive management plan for the Connecticut segment (the "Upper Farmington River Management Plan", dated April 29, 1993) which establishes objectives, standards, and action programs that will ensure long-term protection of the river's outstanding values and compatible management of its land and water resources, without Federal management of affected lands not owned by the United States;

(5) the Farmington River Study Committee voted unanimously on April 29, 1993, to adopt the Upper Farmington River Management Plan and to recommend that Congress include the Connecticut segment in the National Wild and Scenic Rivers System in accordance with the spirit and provisions of the Upper Farmington River Management Plan, and to recommend that, in the absence of town votes supporting designation, no action be taken regarding wild and scenic river designation of the Massachusetts segment; and

(6) the Colebrook Dam and Goodwin Dam hydroelectric projects are located outside the river segment designated by section 3, and based on the study of the Farmington River pursuant to Public Law 99-590, continuation of the existing operation of these projects as presently configured, including associated transmission lines and other existing project works, is compatible with the designation made by section 3 and will not unreasonably diminish the scenic, recreational, and fish and wildlife values of the segment designated by such section as of the date of enactment of this Act.

SEC. 3. DESIGNATION.

Section 3(a) of the Wild and Scenic Rivers Act (16 U.S.C. 1274(a)) is amended by adding the following new paragraph at the end thereof:

"( ) FARMINGTON RIVER, CONNECTICUT.—The 14-mile segment of the West Branch and mainstem extending from immediately below the Goodwin Dam and Hydroelectric Project in Hartland, Connecticut, to the downstream end of the New Hartford-Canton, Connecticut, town line (hereinafter in this paragraph referred to as the 'segment'), as a recreational river, to be administered by the Secretary of the Interior through cooperative agreements between the Secretary of the Interior and the State of Connecticut and its relevant political subdivisions, namely the Towns of Colebrook, Hartland, Barkhamsted, New Hartford, and Canton and the Hartford Metropolitan District Commission, pursuant to section 10(e) of this Act. The segment shall be managed in accordance with the Upper Farmington River Management Plan, dated April 29, 1993, and such amendments thereto as the Secretary of the Interior determines are consistent with this Act. Such plan shall be deemed to satisfy the requirement for a comprehensive management plan pursuant to section 3(d) of this Act.".

16 USC 1274 note.

SEC. 4. MANAGEMENT.

(a) COMMITTEE.—The Director of the National Park Service or his or her designee, shall represent the Secretary on the Farmington River Coordinating Committee provided for in the plan.

Contracts.

(b) FEDERAL.—(1) In order to provide for the long-term protection, preservation, and enhancement of the river segment designated by section 3, the Secretary, pursuant to section 10(e) of

the Wild and Scenic Rivers Act, shall offer to enter into cooperative agreements with the State of Connecticut and its relevant political subdivisions identified in the amendment made by such section 3 and, pursuant to section 11(b)(1) of such Act, shall make a similar offer to the Farmington River Watershed Association. The Secretary, pursuant to such section 11(b)(1), also may enter into cooperative agreements with other parties who may be represented on the Committee. All cooperative agreements provided for in this Act shall be consistent with the Plan, and may include provisions for financial or other assistance from the United States to facilitate the long-term protection, conservation, and enhancement of the segment designated by such section 3 and the implementation of the Plan.

(2) The Secretary may provide technical assistance, staff support, and funding to assist in the implementation of the Plan.

(3) Implementation of this Act through cooperative agreements as described in paragraph (2) of this subsection shall not constitute National Park Service administration of the segment designated by section 3 for purposes of section 10(c) of the Wild and Scenic Rivers Act, and shall not cause such segment to be considered as being a unit of the National Park System.

(c) WATER RESOURCES PROJECTS.—(1) In determining whether a proposed water resources project would have a direct and adverse effect on the values for which the segment designated by section 3 was included in the National Wild and Scenic Rivers System, the Secretary shall specifically consider the extent to which the project is consistent with the Plan.

(2) For purposes of implementation of section 7 of the Wild and Scenic Rivers Act, the Plan, including the detailed analysis of instream flow needs incorporated therein and such additional analysis as may be incorporated in the future, shall serve as the primary source of information regarding the flows needed to maintain instream resources and the potential compatibility between resource protection and possible water supply withdrawals.

(d) LAND MANAGEMENT.—The zoning ordinances duly adopted by the towns of Hartland, Barkhamsted, New Hartford, and Canton, Connecticut, including the "river protection overlay districts" in effect on the date of enactment of this Act, shall be deemed to satisfy the standards and requirements of section 6(c) of the Wild and Scenic Rivers Act. For the purpose of section 6(c), such towns shall be deemed "villages" and the provisions of that section, which prohibit Federal acquisition of lands by condemnation, shall apply to the segment designated by section 3.

SEC. 5. DEFINITIONS.

16 USC 1274 note.

For the purposes of this Act:

(1) The term "Committee" means the Farmington River Coordinating Committee referred to in section 4.

(2) The term "Plan" means the comprehensive management plan for the Connecticut segment of the Farmington River prepared by the Farmington River Study Committee and the National Park Service, which is known as the "Upper Farmington River Management Plan" and dated April 29, 1993.

(3) The term "Secretary" means the Secretary of the Interior.

16 USC 1274 note.

SEC. 6. FUNDING AUTHORIZATION.

There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this Act, including the amendment to the Wild and Scenic Rivers Act made by section 3.

Approved August 26, 1994.

LEGISLATIVE HISTORY—H.R. 2815:

HOUSE REPORTS: No. 103-430 (Comm. on Natural Resources).
SENATE REPORTS: No. 103-278 (Comm. on Energy and Natural Resources).
CONGRESSIONAL RECORD, Vol. 140 (1994):
Mar. 15, considered and passed House.
June 16, considered and passed Senate, amended.
Aug. 16, House concurred in Senate amendments.

1 OF 1 91 LINES
DS ********** 103RD CONG. STATUS PROFILE FOR H.R.2815 **********
BRIEF TITLE..... Farmington Wild and Scenic River Act
Farmington Wild and Scenic River Act
SPONSOR..... Johnson (CT)
DATE INTRODUCED... July 30, 1993
HOUSE COMMITTEE... Natural Resources
SENATE COMMITTEE.. Energy and Natural Resources
OFFICIAL TITLE.... A bill to designate a portion of the Farmington River in Connecticut as a component of the National Wild and Scenic Rivers System.
CO-SPONSORS..... 5 CURRENT COSPONSORS
Jul 30, 93 Referred to House Committee on Natural Resources.
Sep 16, 93 Referred to Subcommittee on National Parks, Forests and Public Lands.
Oct 28, 93 Subcommittee Hearings Held.
Feb 10, 94 Subcommittee Consideration and Mark-up Session Held.
Feb 10, 94 Forwarded by Subcommittee to Full Committee (Amended).
Sep 30, 93 Executive Comment Requested from Interior.
Mar 2, 94 Committee Consideration and Mark-up Session Held.
Mar 2, 94 Ordered to be Reported (Amended) by Voice Vote.
Mar 10, 94 Reported to House (Amended) by House Committee on Natural Resources Report No: 103-430.
Mar 10, 94 Placed on Union Calendar No: 238.
Mar 15, 94 Called up by House Under Suspension of Rules.
Mar 15, 94 Passed House (Amended) by Voice Vote.
Mar 16, 94 Received in the Senate.
Mar 16, 94 Referred to Senate Committee on Energy and Natural Resources.
Mar 17, 94 Referred to Subcommittee on Public Lands, National Parks and Forests.
Mar 22, 94 Committee on Energy and Natural Resources requested executive comment from Department of the Interior, and Office of Management and Budget.
Mar 25, 94 Committee on Energy and Natural Resources requested executive comment from Federal Energy Regulatory Commission, and Office of Management and Budget.
Apr 8, 94 Committee on Energy and Natural Resources received executive comment from Federal Energy Regulatory Commission.
May 11, 94 Committee Consideration and Mark-up Session Held.
May 11, 94 Ordered to be Reported (amended).
May 25, 94 Reported to Senate (Amended) by Senate Committee on Energy and Natural Resources Report No: 103-278.
May 25, 94 Placed on Senate Legislative Calendar under General Orders. Calendar No. 449.
Jun 16, 94 Passed Senate (amended) by Voice Vote.
Aug 16, 94 On motion that the House suspend the rules and agree to the Senate amendments
Agreed to by voice vote.
Aug 16, 94 Cleared for White House.
Aug 18, 94 Presented to President.
Aug 26, 94 Signed by President.
Aug 26, 94 Became Public Law No: 103-313.

COS CO-SPONSORS..... 5 CURRENT COSPONSORS
AS INTRODUCED..... Kennelly, Gejdenson, DeLauro, Shays, Franks (CT).