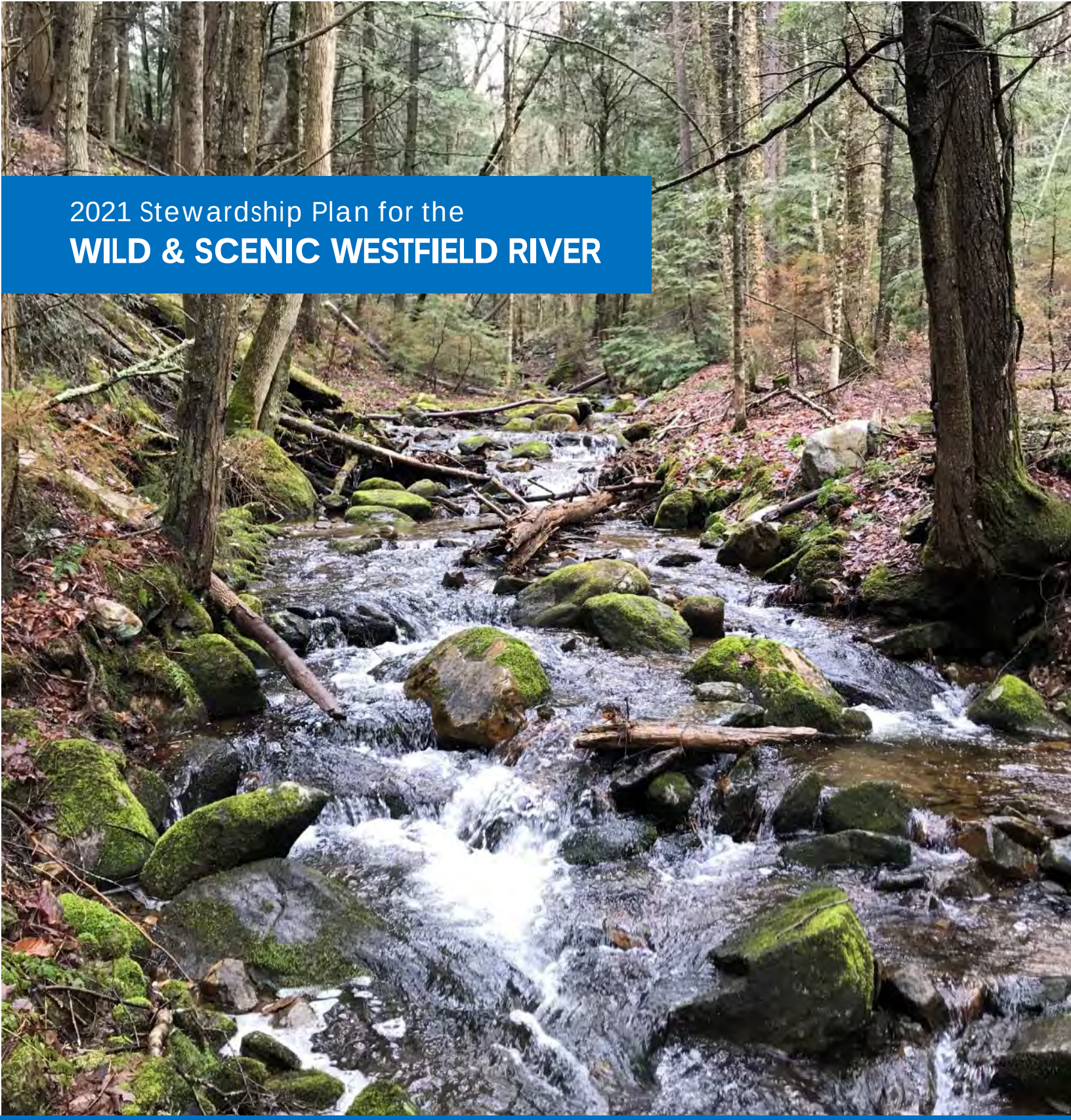

2021 Stewardship Plan for the
WILD & SCENIC WESTFIELD RIVER

Draft: April 2021

Prepared for:

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Prepared by:

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Executive Summary

Over 86 miles of the Westfield River are designated as a National Wild and Scenic River. The Wild and Scenic Westfield River (W&SWR) has many outstanding features requiring long-term stewardship, including high quality waters, abundant cold water habitat, excellent recreational opportunities, critical riverine and riparian habitat for fish, birds, black bear, beavers, and other species, and multiple scenic, cultural, and historic sites. This Stewardship Plan is intended to serve as a guide for ongoing management of the W&SWR and has four primary objectives:

1. Provide a vision and strategy to protect and enhance of the Westfield River watershed.
2. Prioritize recommended actions.
3. Assess management, staffing, and organizational options and priorities for the Wild & Scenic Westfield River Committee (W&SWRC).
4. Assess stakeholder outreach and strategies.

To meet these objectives, a series of workshops and meetings were held to solicit input on priority actions to protect and conserve the Westfield River. Stakeholders provided input on water resources, terrestrial resources, and cultural and historic resources in a series of topic-focused workshops. The major issues identified through the stewardship planning process include:

- **Water Resources**: chemical/physical water quality, aquatic ecology and habitat connectivity, and stream channel integrity
- **Terrestrial Resources**: protection of terrestrial habitat, forest integrity and habitat corridors, riparian land clearing, native plant communities, etc.
- **Cultural and Historic Resources**: recreation access and management, cultural landscape/historic character, scenic resources, citizen education/engagement, etc.

The top priority goals identified for the W&SWR during the stewardship planning process are as follows:

- Protect and improve the ability of the Wild and Scenic Westfield River to support cold water assemblages.
- Improve stream habitat connectivity for the Wild & Scenic Westfield River, with a focus on removal of physical barriers to passage and fish and other wildlife.
- A comprehensive and coordinated approach to invasive species management is needed to protect high-quality stream and riparian habitat for the Wild & Scenic Westfield River.
- A comprehensive visitor use management plan is needed to protect recreational areas in the Wild & Scenic Westfield River from impacts associated with over-use.
- Improved public outreach coordination between the W&SWRC and watershed partners is needed to improve citizen engagement in protecting the Wild & Scenic Westfield River, and to make best use of limited financial and staff resources.

Specific actions recommended to achieve the goals listed above are presented and prioritized in Table 4-1. Some of the actions identified in this Plan can be completed by the W&SWRC in collaboration with watershed partners. For other actions, additional funding is likely to be required. This Stewardship Plan should be updated periodically and as specific actions are implemented, to ensure that priorities are properly focused for the long-term protection of this unique and valuable resource.

1. Introduction

1.1 The National Wild and Scenic Rivers System

The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to protect certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The Wild and Scenic Rivers Act (WSRA) is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development. Designation neither prohibits development nor gives the federal government control over private property. Recreation, agricultural practices, residential development, and other uses may continue. Protection of the river is provided through voluntary stewardship by landowners and river users and through regulation and programs of federal, state, and local governments.

The Wild and Scenic Rivers 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 WSRA purposefully strives to balance dam and other construction at appropriate sections of rivers with permanent protection for some of the country's most outstanding free-flowing rivers. To accomplish this, it prohibits federal support for actions such as the construction of dams or other instream activities that would harm the river's free-flowing condition, water quality, or outstanding resources values. Since the development of the WSRA, over 200 rivers or river segments have been protected nationwide, including six in New England.

1.1.1 Federal Wild and Scenic River Designation

There are two ways a river can become a National Wild and Scenic River. The first is by an Act of Congress. The second is by a locally-initiated designation outlined under Section 2 a.ii of the WSRA, which allows communities or states to nominate a river or river segments to be designated "Wild and Scenic" by the federal Secretary of Interior. Rivers designated in this manner are administered by the state with the exception of federal lands. To achieve a locally-initiated designation, the following process is followed:

1. Develop a management plan for the river, outlining how communities and state agencies will permanently administer the river as a Wild and Scenic River.
2. Designate the river as "wild, scenic, or recreational by or pursuant to an act of State legislature".
3. Apply to the Secretary of the Interior for federal designation (through the Governor of the State). The Secretary of the Interior makes a decision on designation based upon how well the river meets the criteria set out in the WSRA.

Eligibility

To be eligible for designation as “Wild and Scenic,” a river or river segment must have at least one Outstandingly Remarkable Resources Value (ORRV). The ORRVs are river-related scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. The locally identified ORRVs must have unique or exemplary qualities at a comparative regional or national scale.

Benefits of a Wild and Scenic Designation

The National Wild and Scenic River designation provides many benefits. Communities along the designated portions of the river have access to resources that help to protect the watershed’s ORRVs. These benefits may include:

- **Tools to protect water quality and watershed hydrology** for local residents.
- **Protection of rural character** and opportunities to conserver stream bank, large wildlife habitats, and important open space areas which help maintain the qualities of local communities.
- **Access to funding and grants** to help towns achieve open space and conservation goals and opportunities to leverage additional funds and supports.
- **Prevents federally funded or permitted projects determined to potentially harm to the watershed’s ORRVs.** Designation creates a specific mandate that no federally permitted or funded “water resource development project” shall be allowed that would have a direct and adverse impact upon the ORRVs that made the river eligible for designation.
- **Technical support, monitoring, and research** to help in sound decision-making for local communities.
- **Outreach and education opportunities** to enhance understanding of the watershed and its characteristics. Publications, programs, workshops, and trainings promote resources values and Best Management Practices (BMPs) offered for a range of audiences.
- **Preservation of the scenic views** that define the local watershed community.
- **Fosters the next generation of conservationists**.
- **Recognition of important historical and cultural sites** important to the community.

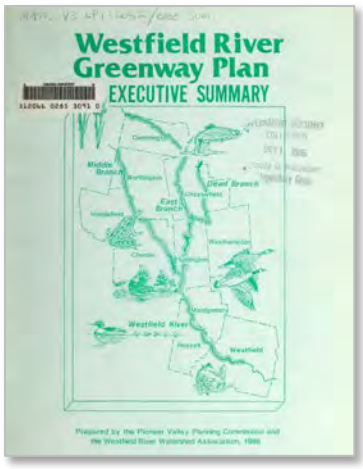
In addition, the National Park Service is required to review and comment on all projects that are either federally funded or federally permitted to ensure such activities are consistent with the protection and enhancement of the ORRVs that made the river eligible for designation.

1.2 The Wild and Scenic Westfield River

1.2.1 Wild and Scenic Designation

The Westfield River became Massachusetts' first National Wild and Scenic River when forty-three miles were designated in November 1993. Today, the designation has been expanded to encompass over 86 miles of the Westfield River's three major tributaries and headwater streams. The management of the National Wild and Scenic River designation for the Westfield River is accomplished through local-based, state and federal protection.

The Westfield River Greenway Plan, first developed in 1986 and last updated in 1993 by the Pioneer Valley Planning Commission and the Westfield River Watershed Association, set forth the basic management plan for protecting the Westfield River. A primary action identified in the Greenway Plan was to obtain the Wild and Scenic designation for the Westfield River.



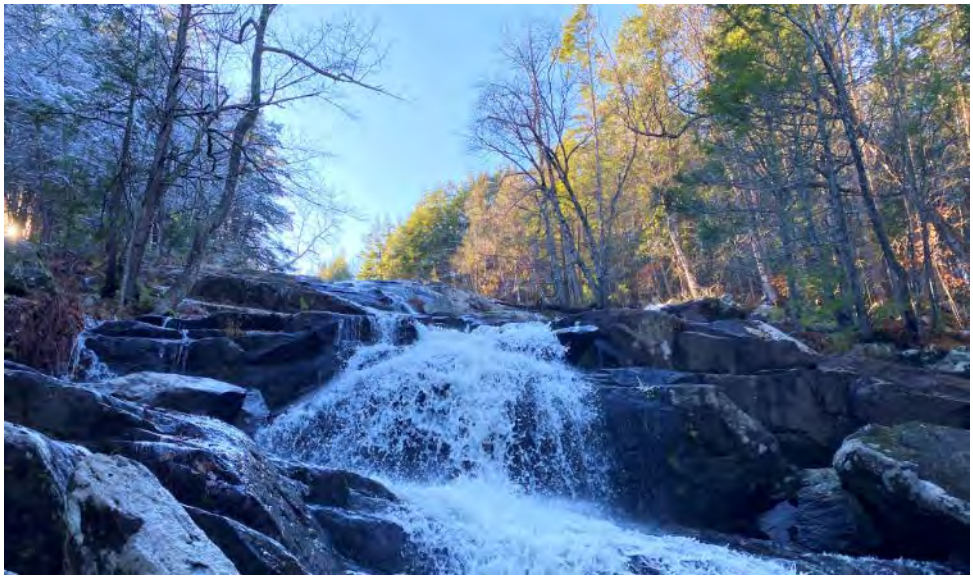
1986 Westfield River Greenway Plan

1.2.1 Wild and Scenic Designated Segments

The Westfield River Wild and Scenic designation stretches over 86 miles along the Main Stem, East Branch, Middle Branch, and West Branch of the Westfield River (Figure 1-1). The designated segments are listed in Table 1-1.

1.2.2 Wild and Scenic Westfield River Committee

The Wild and Scenic Designation is managed by the Wild and Scenic Westfield River Committee (W&SWRC) which is comprised of representatives from the towns of Becket, Chester, Chesterfield, Cummington, Huntington, Middlefield, Savoy, Washington, Windsor, and Worthington, as well as the Commonwealth of Massachusetts, the National Park Service, Pioneer Valley Planning Commission, Berkshire Regional Planning Commission, the Trustees of Reservations, and the Westfield River Watershed Association. Representatives to the Committee are appointed by their local elected officials or appropriate authorities in the organizations they represent.



Glendale Brook (Glendale Falls) in Chester, MA

Table 1-1. Wild and Scenic Westfield River Designated Segments

Waterbody Name	W&S Classification	W&S Segment Description	Town(s)	Segment Miles
Middle Branch Westfield River	Recreational	Goss Hill Road Bridge to confluence of the East Branch	Huntington	1
Shaker Mill Brook	Scenic	Brooker Hill Road in Becket to the confluence of Shaker Mill Brook and Watson Brook	Becket, Washington	1
Depot Brook	Scenic	4.5 miles from confluence to the confluence with West Branch	Becket, Washington	7
Savery Brook	Scenic	2.9 miles from confluence to the confluence with West Branch	Becket, Washington	3
Watson Brook	Scenic	1.9 miles from confluence to the confluence with West Branch	Washington	2
Center Pond Brook	Scenic	Center pond to the confluence with the Upper East Branch	Becket	2
West Branch Westfield River	Recreational	Chester/Huntington town line to the confluence with the main stem	Huntington	2
Westfield River	Recreational	Confluence with the East Branch and Middle Branch in Huntington Center to the Huntington/Russel town line	Huntington	1
Shaker Mill Brook	Wild	Brooker Hill Road in Becket to the headwaters	Becket, Washington	2
Drowned Land Brook	Scenic	1.5 miles from confluence to the confluence with the Upper East Branch	Windsor, Savoy	4
Center Brook	Scenic	2.5 miles from confluence to the confluence with the West Branch	Savoy	3
Windsor Jambs Brook	Scenic	1.3 miles from confluence with the confluence of the Upper East Branch	Windsor	2
Upper East Branch Westfield River	Scenic	Windsor/ Cummington town line to the confluence with the East Branch	Windsor, Savoy	7
East Branch Westfield River	Recreational	Confluence with Sykes Brook to the confluence with the West Branch	Huntington	4
Westfield River	Scenic	Route 9 diverges from the river to < 1 mile upstream of Holly Brook	Chesterfield, Cummington	8
West Branch Westfield River	Scenic	Railway bridge 2000 feet downstream of the Becket town center to the Town of Chester	Becket, Chester, Middlefield	10
West Branch Westfield River	Recreational	Town of Chester to the Huntington/Chester town line	Chester	5
Glendale Brook	Scenic	0.4 miles upstream from confluence with the Middle Branch to the confluence with the Middle Branch	Middlefield	2
Middle Branch Westfield River	Recreational	Peru / Worthington town line to the confluence of Kinne Brook	Chester, Middlefield, Worthington	12
East Branch Westfield River	Recreational	Windsor / Cummington town line to where Route 9 diverges from the river	Cummington	9
Total				**86**

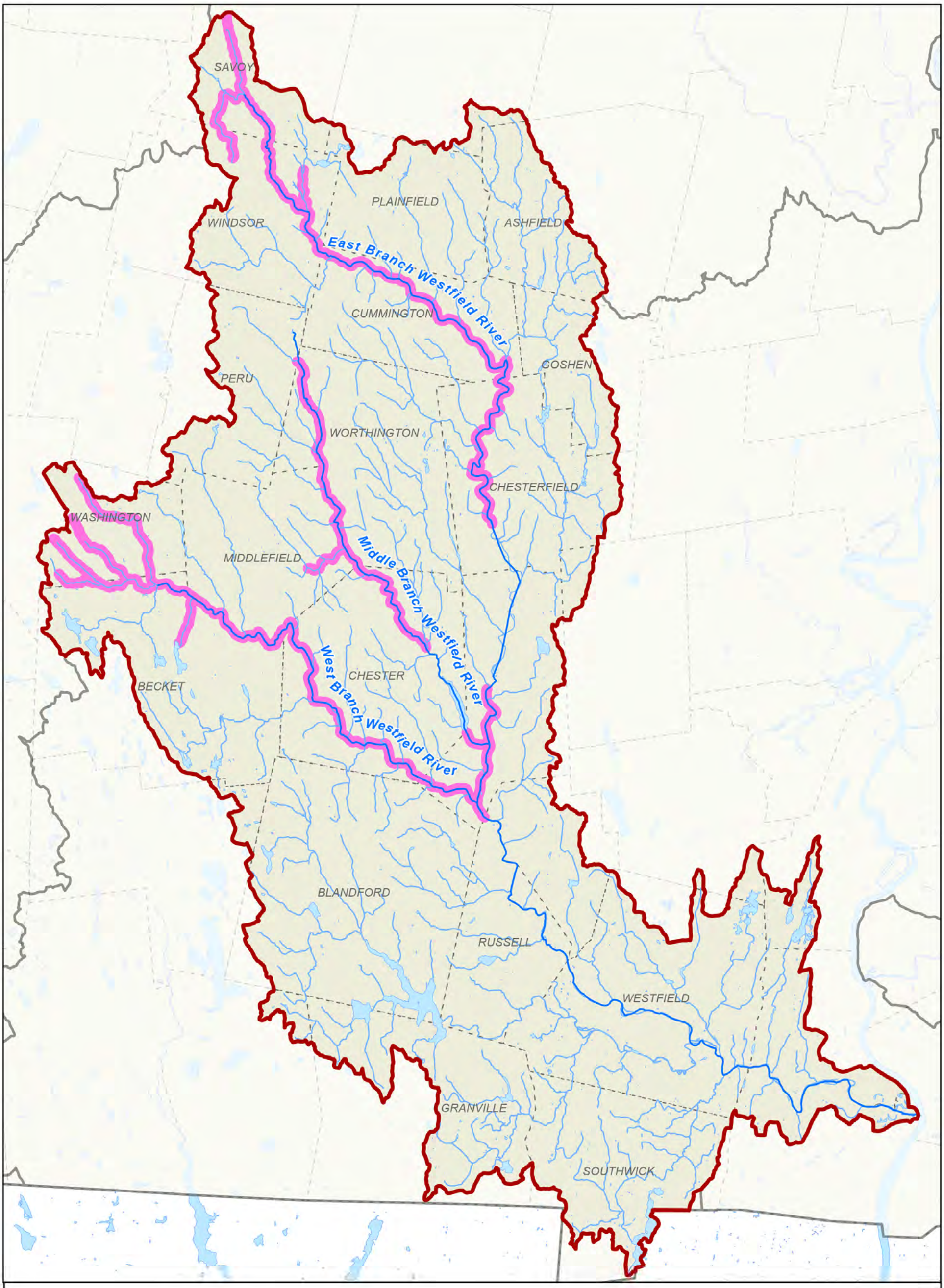


Figure 1-1
Westfield Wild and Scenic River

N
W E
S

Miles
0 1 2 3 4 5

- Westfield River
- Other Rivers and Streams
- Wild and Scenic River Segments
- Lake, Pond, or Reservoir
- Watershed Boundary
- Town Boundaries

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Data Sources: MassGIS, USGS, NAACC, CEI

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1.3 The Wild and Scenic Westfield River Stewardship Plan

While the Greenway Plan served as the initial management plan as the basis for attaining Wild & Scenic designation, a Stewardship Plan must be developed for the river. The Wild and Scenic Westfield River Stewardship Plan has four primary objectives:

1. Provide a vision and strategy to protect and enhance the water quality, ecology, historic resources, scenic qualities, and cultural resources of the Westfield River watershed.
2. Prioritize recommended actions.
3. Assess management, staffing, and organizational options and priorities for the W&SWRC.
4. Assess stakeholder outreach and strategies to increase visibility and support of the W&SWRC and its activities.

This Stewardship Plan is intended to serve as a guidance document for ongoing management of the Westfield River. The actions and priorities will need to be updated periodically as resource protection needs and priorities evolve.

The remaining sections of this Stewardship Plan includes following information:

Section	Description
Section 2: The Stewardship Planning Process	*This plan builds off of the findings of the Greenway Plan. Section 3 describes the stewardship planning process, which included a series of stakeholder workshops and public engagement.*
Section 3: The Wild and Scenic Westfield River Watershed	*This section provides and overview of the Westfield River watershed and its resources and values.*
Section 4: Actions and Priorities	*This section outlines actions and priorities for the Westfield River, as identified through the planning process described in Section 3.*
Section 5: Funding Source Assessment	*Section 5 summarizes potential funding sources available for the actions identified in Section 4.*
Section 6: Conclusions / Next Steps	*This section summarizes the main points of the Stewardship Plan and identifies next steps for implementation*

2. The Wild & Scenic Westfield River Stewardship Planning Process

A series of meetings were held to solicit input on priority actions and activities necessary to protect and conserve the Westfield River.

2.1 Kickoff Meeting

A kick-off meeting for the W&SWR Stewardship Plan project was held on June 11, 2020 from 6:30-8 pm. Due to COVID-19 limitations, the meeting was held virtually via Zoom. The goals of this meeting were to introduce the project, review project goals and objectives, review availability of existing documents and studies, discuss the planned project approach, review the project schedule, and identify next steps. The meeting participants are listed in Table 2-1. A detailed summary of the kickoff meeting is provided in Appendix A.

Table 2-1. Attendees of the W&SWR Stewardship Plan Kickoff Meeting

Name	Position/Town
Carl Cignoni	Committee Chair, Chesterfield
David Pierce	Chester (alternate)
David Zink	Windsor
Jim Caffrey	Committee Secretary, Windsor
Carol Waag	Middlefield
Bob Thompson	Chester
Amy Pulley	Cummington
Meredyth Babcock	Outreach Coordinator
Jack Lehan	MA Division of Ecological Restoration (DER)
Bob Hartzel	Comprehensive Environmental, Inc. (CEI)
Emily DiFranco	CEI

2.2 Stewardship Planning Workshops

A main goal of the Stewardship Plan is to identify and prioritize river stewardship challenges, opportunities, and actions based on current and anticipated future conditions of the W&SWR corridor and its watershed. To accomplish this goal, three topic-focused workshops were conducted, focusing on Water Resources, Cultural Resources, and Cultural and Land Uses.

2.2.1 Pre-Workshop Interviews

In advance of the workshops, CEI conducted interviews with key subject matter experts, stakeholders, and other project partners identified by the W&SWRC for each focus area (Table 2-2). The pre-workshop interviews were conducted to provide key information for presentation at the workshops and to help guide workshop discussions. Issues discussed during the interviews included a broad range of short- and long-tern concerns including environmental, infrastructure, and social considerations (e.g., stormwater, aging/undersized infrastructure, land development/loss of habitat, recreational access, historic preservation, public education, W&SWRC organizational structure, etc.).

Table 2-2. Pre-workshop interviews held for the W&SWR Stewardship Plan

Name	Organization
Meredyth Babcock	W&SWR Outreach Coordinator
Jeff Penn	Longtime community activist and volunteer
Adam Kautza	Coldwater Fisheries Project Leader, MA Division of Fisheries
Denise Cormier	Town of Chesterfield
Sally Loomis	Hilltown Land Trust
Matt Lundsted	Contractor, culvert specialty
Chris Curtis	Author of Westfield River Greenway Plan
Erin Rodgers	Trout Unlimited
David Paulson	Biologist, MA Natural Heritage and Endangered Species
John Burns	Trout Unlimited/WISP/Botanist working on the Westfield River
Julie Richburg	The Trustees of Reservations
Tom Lautenheizer	Watershed Invasive Species Partnership (WISP)
Carro Frost	WISP
Nancy Putnam	MA Department of Conservation and Recreation (DCR)

Interview questions and responses are provided in Appendix B. Key themes from the pre-workshop interviews included the following:

Focus Topic	Areas of Concern /Strengths
Water Resources	• **Coldwater habitat**: *W&SWR provides some of the best and most abundant coldwater habitat in the state -critical to protect this resource; lack of in-stream diversity; potential impacts from increasing intensity of storms* • **Excellent existing water quality** • **Dam and stream connectivity**: *undersized or failing structures; poor design of road crossings; impacts of water withdrawals on streamflow* • **Development**: *shoreline development; loss of historic character along the river; multiple town planning regulations and conservation organizations – a more coordinated land protection plan needed for the W&SWR; bank erosion*
Terrestrial Resources	• **Wildlife corridors:** *intact segments of wild lands* • **Recreation**: *hikers, ATVs, parking at trailheads* • **Riparian clearing:** *land development, agriculture* • **Invasive plants:** *Japanese knotweed, garlic mustard, oriental bittersweet.*
Cultural/Land Uses	• **Loss of historic character of the watershed**: *new development, private ownership of cultural resources* • **Funding challenges** • **Public outreach/education**: *W&SWRC needs to determine which public outreach programs to focus on for best citizen engagement; need for a funded Wild and Scenic coordinator*

2.2.2 Topic-Focused Workshops

Due to COVID-19 limitations, workshops could not be held in person and were held virtually via Zoom. The three topic-focused sessions built off the pre-workshop interviews to identify resources, identify issues and problems, and develop actions to address each category. The following materials were prepared by CEI for each workshop:

- Workshop invitations
- Westfield River watershed base maps (overall map and maps for each town)
- Impervious Surfaces and Open Space Map
- Wetlands and Critical Habitats Map
- Action Prioritization Matrix
- Overview PowerPoint presentation for each workshop topic

Workshop materials were emailed to attendees in advance of the workshop. All workshop materials provided in Appendix C.

The working group sessions included a brief presentation and group discussion to develop a list of issues and actions for each topic and related sub-categories. The sessions were recorded to make them available for stakeholders who could not attend the meetings. Upon completion of the meetings, a draft matrix for each workshop topic was emailed to stakeholder group to identify overall priorities for the watershed. The three topic-focused workshops included:

Focus Topic	Description
Water Resources 	The Water Resources Working Group working group was held on November 5, 2020 from 10am to 12 pm via Zoom. The focus areas of this meeting were physical and chemical water quality, aquatic ecology and habitat connectivity, and stream channel integrity.
Terrestrial Resources 	The Terrestrial Resources Working Group working group was held on November 12, 2020 from 10am to 12 pm via Zoom. The focus areas of this meeting were protection of terrestrial habitat, forest integrity and habitat connectivity, native plant communities, etc.
Cultural/Land Uses 	The Cultural/Land Uses Working Group working group was held on November 17, 2020 from 7 to 9 pm via Zoom. The focus areas of this meeting were recreation access and management, cultural landscape/historic character, scenic resources, citizen education/engagement, etc.

Attendees for each workshop are listed in Table 2-3.

Table 2-3. Attendees of the W&SWR Stewardship Plan Workshops

Name	Organization	Workshop Topic		
		Water Resources 11/5/2020	Terrestrial Resources 11/12/2020	Cultural/ Land Uses 11/17/2020
Carl Cignoni	W&SWR Committee	●	●	
John Burns	Trout Unlimited/WISP	●	●	●
Merdyth Babcock	W&SWR Outreach Coordinator	●	●	
Jamie Fosburgh	National Parks Service	●		●
Andrew Petitdemange	National Parks Service	●	●	
Liz Lacy	National Parks Service	●	●	●
Emily Boss	Franklin Land Trust	●		●
Alain Peteroy	Franklin Land Trust	●		
Laura Marx	The Nature Conservancy		●	
Melissa Lenher	MassDOT	●		
Liana DiNunzio	MassDOT		●	
James Harwood	MassDOT			●
Heather Wyman	Appalachian Mountain Club – Berkshire Chapter		●	
Jim Caffrey	The Trustees of Reservations, W&SWRC Windsor Representative		●	●
Sally Loomis	Hilltown Land Trust		●	●
Dave Pierce	Friends of the Keystone Arches			●
Jake Lehan	MA DER	●		
Bob Hartzel	CEI	●	●	●
Emily DiFranco	CEI	●	●	●

3. The Westfield River Watershed

The Westfield River is located in western Massachusetts along the eastern slopes of the Berkshires. The River is comprised of three major branches - the East Branch, the Middle Branch, and the West Branch - and flows south to its confluence with the Connecticut River in Agawam (Figure 1-1). The Westfield River watershed has an area of approximately 517 square miles which includes portions of 29 towns in western Massachusetts. Over 114 square miles of the watershed are designated as Outstanding Resource Waters (ORWs) based on the Massachusetts Surface Water Quality Standards. ORWs are defined by these Standards to "*constitute an outstanding resource as determined by their outstanding socioeconomic, recreational, ecological, and/or aesthetic values*."

3.1 Watershed Land Uses

Based on land use data from the Massachusetts Geographic Information System (MassGIS), the Westfield River watershed is predominately forested (77%). Developed lands, including residential, commercial, and industrial land uses make up approximately 9% of the land use and are located primarily in town centers or along major transportation corridors. Wetlands cover almost 7% and agricultural land uses cover approximately 5% of the watershed. Agriculture is scattered throughout the watershed with a higher concentration in the center and northern portions of the watershed near the Middle Branch and the East Branch. Surface water occupies less than 2% of the watershed and other less common land uses (less than 1% of the watershed) include barren land, shrub/scrub, and grasslands (Figures 3-1 and 3-2).

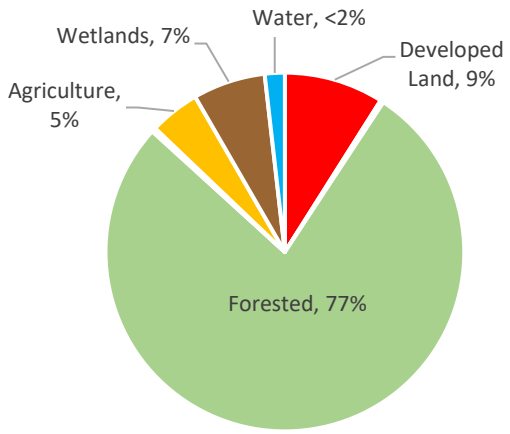
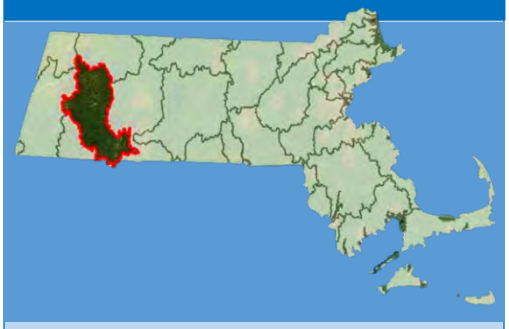


Figure 3-1. Land Use Percentages in the Westfield River Watershed

WESTFIELD RIVER WATERSHED FACTS



Watershed Area: 517 square miles

Watershed Towns:

Agawam, Ashfield, Becket, Blandford, Buckland, Chester, Chesterfield, Cummington, Goshen, Granville, Hawley, Holyoke, Huntington, Middlefield, Montgomery, Otis, Peru, Plainfield, Russell, Savoy, Southampton, Southwick, Tolland, Washington, West Springfield, Westfield, Westhampton, Windsor, and Worthington

Major Surface Waters:

- 636 miles of rivers and streams
- 4550 acres of lakes and ponds

Wild and Scenic River Designation:

- East Branch (35 miles)
- Middle Branch (14 miles)
- West Branch (34 miles)
- Main Stem (3 miles)

Predominant Land Uses:

- Forested (77%)
- Developed (9%)
- Wetlands (7%)
- Agriculture (5%)

Impervious Cover:

20 square miles (4% of watershed)

Protected Areas and Open Space:

177 square miles (34% of watershed)

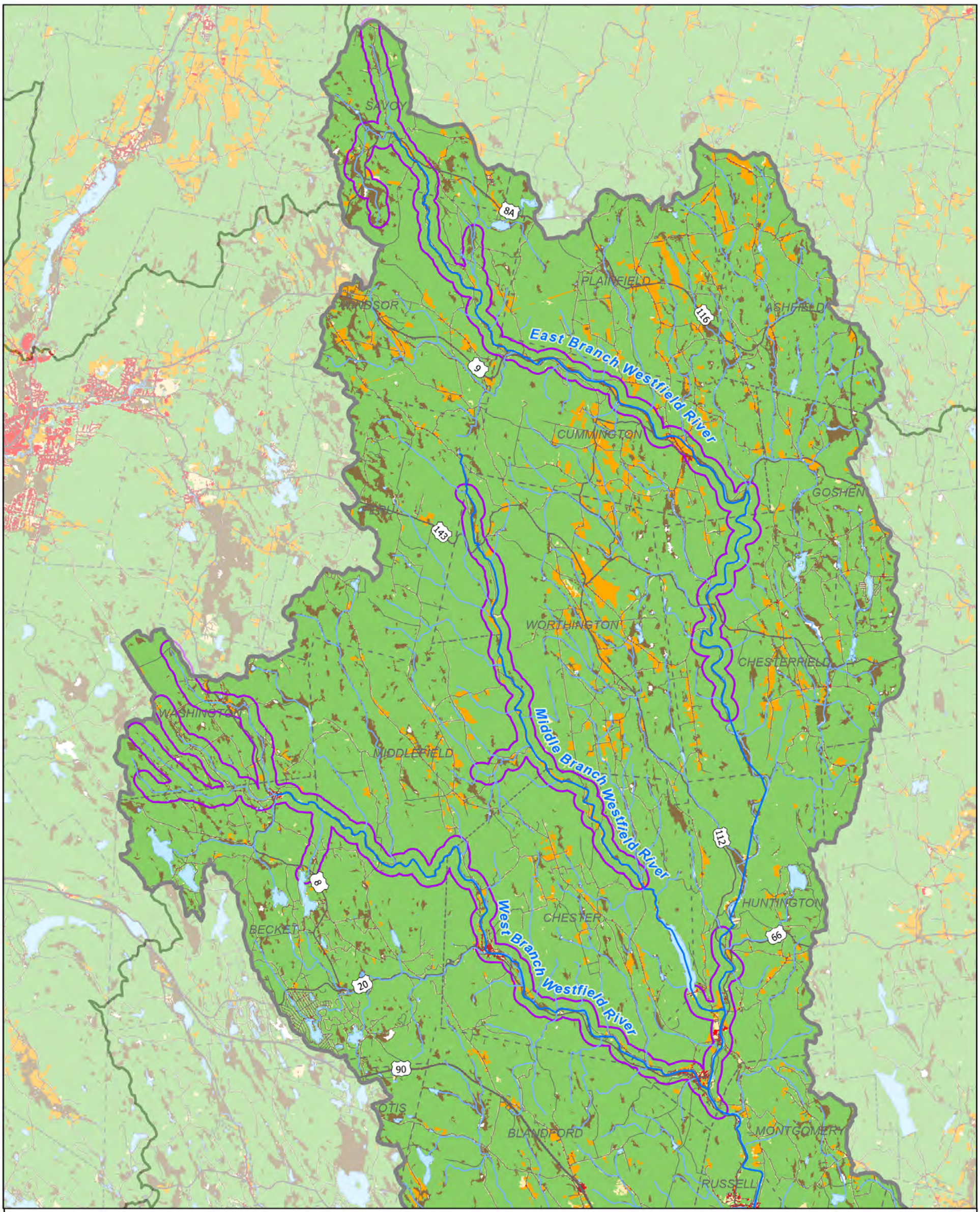


Figure 3-2
Westfield Wild and Scenic River

Land Use

Comprehensive Environmental Incorporated

N
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0 1 2 3 4 5

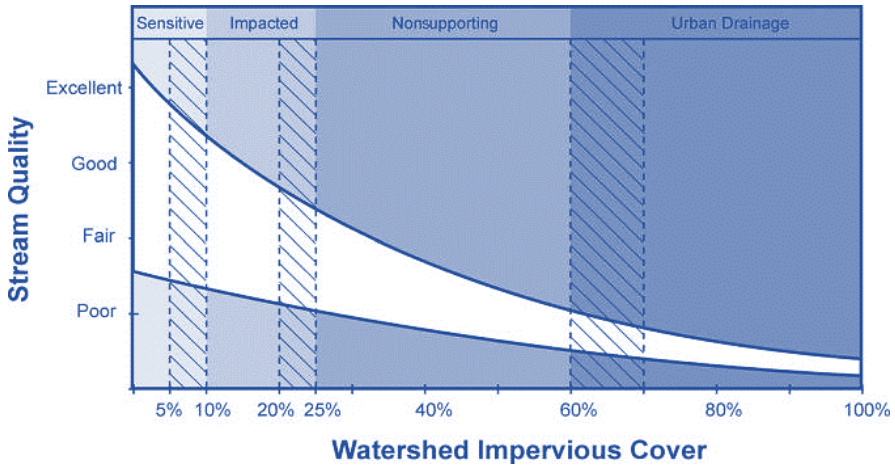
Data Sources: MassGIS, USGS, NAACC, CEI

- Westfield River
- Wild and Scenic River Segments
- Other Rivers and Streams
- Lake, Pond, or Reservoir
- Major Roads
- Minor Roads
- Watershed Boundary
- Town Boundaries
- Developed
- Open Land
- Forested
- Agriculture
- Wetlands

1/26/2021

Impervious Cover: Impervious surfaces include paved parking lots, sidewalks, roadways, rooftops, and other surfaces that do not allow precipitation to infiltrate into the ground. As a watershed becomes more developed and impervious surfaces increase, the natural hydrology is altered, resulting in increased surface runoff and decreased groundwater recharge and base flow to rivers.

According to the Revised Impervious Cover Model developed by the Center for Watershed Protection (2009), receiving water quality and biological integrity are "impacted" when watershed impervious cover values are between 10-25%. Overall impervious cover in the Westfield River watershed is currently estimated at 4%, well below the 10% threshold for "impacted" stream quality (Figure 3-3).



Center for Watershed Protection's Revised Impervious Cover Model (2009)

Nonpoint Source Pollution and Water Quality

Understanding watershed land uses is important when assessing potential sources of pollution. Although the Westfield River watershed is over 75% forested, multiple land uses within the watershed may threaten water quality. **Nonpoint source (NPS) pollution** comes from many diffuse sources and is caused by rain or melting snow moving over and through the ground, carrying pollutants and ultimately depositing them into lakes, rivers, coastal waters and ground water. These pollutants can come from a variety of land uses, including:

- Landscaping and agricultural fertilizers and herbicides
- Oil, grease, and toxic chemicals from roads and developed areas
- Sediment/erosion during construction activities
- Streambank erosion
- Irrigation runoff
- Bacteria and nutrients from animal livestock, pet wastes, and faulty septic systems

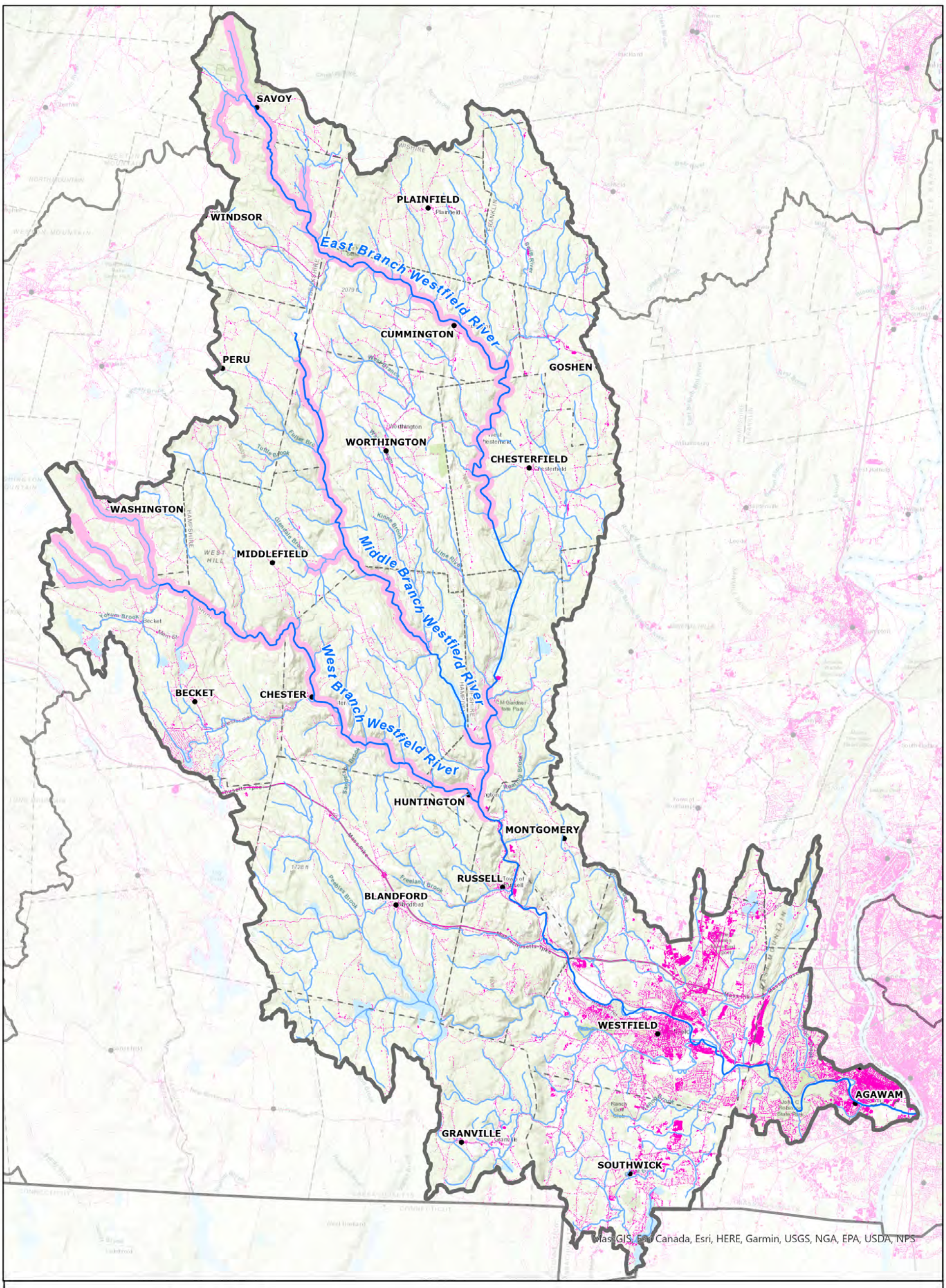


Figure 3-3
Westfield Wild and Scenic River

Impervious Surfaces

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W E
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Miles
0 1 2 3 4 5

- Westfield River
- Other Rivers and Streams
- Wild and Scenic River Segments
- Town Centers
- Watershed Boundary
- Town Boundaries
- Impervious Surfaces

Comprehensive Environmental Incorporated

Data Sources: MassGIS, USGS, NAACC, CEI

4/1/2021

3.2 Water Resources

The Westfield River is widely known for its excellent water quality and high quality in-stream habitat for cold water fisheries. The Westfield River Wild and Scenic designation stretches over 86 miles along the Main Stem, East Branch, Middle Branch, and West Branch of the Westfield River (Figure 1-1). The designated segments are provided in detail in Table 1-1.

3.2.1 Massachusetts Water Quality Standards

The Massachusetts Water Quality Standards provide the baseline quality that all surface waters must meet in order to protect their designated uses. They are the "yardstick" for identifying where water quality impairments exist and for determining the effectiveness of regulatory pollution control and prevention programs. A body of water is considered “impaired” if it fails to meet one or more water quality standards.

Massachusetts assigns designated uses to each waterbody (Table 3-1). Each use has associated narrative and numeric water quality criteria that must be maintained to protect the waterbody and its designated use. Water quality criteria for each classification can be found in 314 Mass. Reg. Section 4.

Table 3-1. Designated Uses for Massachusetts Surface Waters for Freshwater

Designated Use	MassDEP Definition
Aquatic Life	Suitable habitat for sustaining a native, naturally diverse, community of aquatic flora and fauna, including, but not limited to, wildlife and threatened and endangered species and for their reproduction, migration, growth and other critical functions. Two subclasses of aquatic life are designated in the SWQS for freshwater bodies: ➢ **Cold Water Fishery**: capable of sustaining a year-round population of cold water aquatic life, such as trout ➢ **Warm Water Fishery**: waters that are not capable of sustaining a year-round population of cold water aquatic life. In certain [estuarine] waters, excellent habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass.
Fish Consumption	Pollutants shall not result in unacceptable concentrations in edible portions of marketable fish or for the recreational use of fish, other aquatic life or wildlife for human consumption.
Public Water Supply	Used to denote those waters used as a source of public drinking water. They may be subject to more stringent regulation in accordance with the Massachusetts Drinking Water Regulations (310 CMR 22.00). These waters are designated for protection as Outstanding Resource Waters under 314 CMR 4.04(3).
Primary Contact Recreation	Waters are suitable for any recreation or other water use in which there is prolonged and intimate contact with the water with a significant risk of ingestion of water. These include, but are not limited to, wading, swimming, diving, surfing and water skiing.
Secondary Contact Recreation	Waters are suitable for any recreation or other water use in which contact with the water is either incidental or accidental. These include, but are not limited to, fishing, including human consumption of fish, boating and limited contact incident to shoreline activities.
Aesthetics	All surface waters shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.
Agricultural	Waters are suitable for irrigation or other agricultural uses.
Industrial	Waters are suitable for compatible industrial cooping and process uses.

All freshwater surface waters of Massachusetts are either classified as Class A, B, or C. All surface waters in the Westfield River watershed are classified as Class B. Massachusetts 314 CMR Section 4 defines Class B freshwater as follows:

> **Class B:** *These waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth, and other critical functions, and for primary and secondary contact recreation. They may be suitable as public water supply with appropriate treatment. Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooing and process uses. These waters shall have consistently good aesthetic value.*

3.2.1.1 Water Quality Impairments

The Federal Clean Water Act (CWA) is the primary law regulating pollution of waterbodies in the United States. The Act requires states to:

1. Assess all waters of the state to determine if they meet water quality standards (305(b) List);
2. Create a list of impaired waters that do not meet standards and update the list every other year (303(d) List);
3. Set pollutant-reduction goals needed to restore impaired waters, called the Total Maximum Daily Load (TMDL).

Based on the 305(b) assessment, waterbodies that do not meet water quality standards are considered impaired and appear on the MA 303(d) List. Impairment categories are as follows:

- **Category 2**: Attaining some uses; other uses not assessed.
- **Category 3**: No uses assessed.
- **Category 4**: Impaired but assessment is complete or impairment not caused by a pollutant.
- **Category 5**: Impaired.

In the Westfield River watershed, three river segments are on the current (2018) Massachusetts 303(d) List (2018) (Table 3-3). Impairments are also shown in Figure 3-4. The primary impairment in the Westfield River watershed is temperature, including 44 river miles within Wild & Scenic East Branch and Middle Branch river segments as listed in Table 3-2.

Table 3-2. Temperature Impaired Segments of the Wild & Scenic Westfield River

Wild & Scenic Westfield River Section	Wild & Scenic River Miles	Temp. Impaired River Miles
East Branch	34.5	30.8
Middle Branch	14.3	13.2
West Branch	34.1	0
Mainstem	3.1	0
Total	**86 miles**	**44 Miles** (51%)

Table 3-3. List of Waters in the Westfield River Watershed with Impairments noted (2018)

MA ID	Waterbody Name	Water Quality Assessment Category
MA32-65	Middle Branch Westfield River	5 - Temperature Impairment
MA32-13	West Falls Branch	5 - Temperature Impairment
MA32-04	East Branch Westfield River	5 - Temperature and Enterococci Impairment
MA32-62	Abbott Brook	3 - No uses assessed
MA32-43	Geer Brook	3 - No uses assessed
MA32-53	Steep Bank Brook	3 - No uses assessed
MA32-17	Depot Brook	2 - Attaining some uses; others not assessed
MA32-10	Glendale Brook	2 - Attaining some uses; others not assessed
MA32-32	Kinne Brook	2 - Attaining some uses; others not assessed
MA32-11	Meadow Brook	2 - Attaining some uses; others not assessed
MA32-44	Pond Brook	2 - Attaining some uses; others not assessed
MA32-31	Sanderson Brook	2 - Attaining some uses; others not assessed
MA32-18	Shaker Mill Brook	2 - Attaining some uses; others not assessed
MA32-12	Swift River	2 - Attaining some uses; others not assessed
MA32-20	Walker Brook	2 - Attaining some uses; others not assessed
MA32-01	West Branch Westfield River	2 - Attaining some uses; others not assessed
MA32-05	Westfield River	2 - Attaining some uses; others not assessed
MA32-19	Yokum Brook	2 - Attaining some uses; others not assessed
MA32-50	Bartlett Brook	2 - Attaining some uses; others not assessed
MA32-45	Bronson Brook	2 - Attaining some uses; others not assessed
MA32-42	Factory Brook	2 - Attaining some uses; others not assessed
MA32-64	Fuller Brook	2 - Attaining some uses; others not assessed
MA32-46	Kearney Brook	2 - Attaining some uses; others not assessed
MA32-49	Mill Brook	2- Attaining some uses; others not assessed
MA32-54	North Branch Swift River	2 - Attaining some uses; others not assessed
MA32-61	Roaring Brook	2 - Attaining some uses; others not assessed
MA32-52	Shaw Brook	2 - Attaining some uses; others not assessed
MA32-48	Stones Brook	2 - Attaining some uses; others not assessed
MA32-47	Tower Brook	2 - Attaining some uses; others not assessed
MA32-51	Westfield Brook	2 - Attaining some uses; others not assessed
MA32-03	Middle Branch Westfield River	2 - Attaining some uses; others not assessed

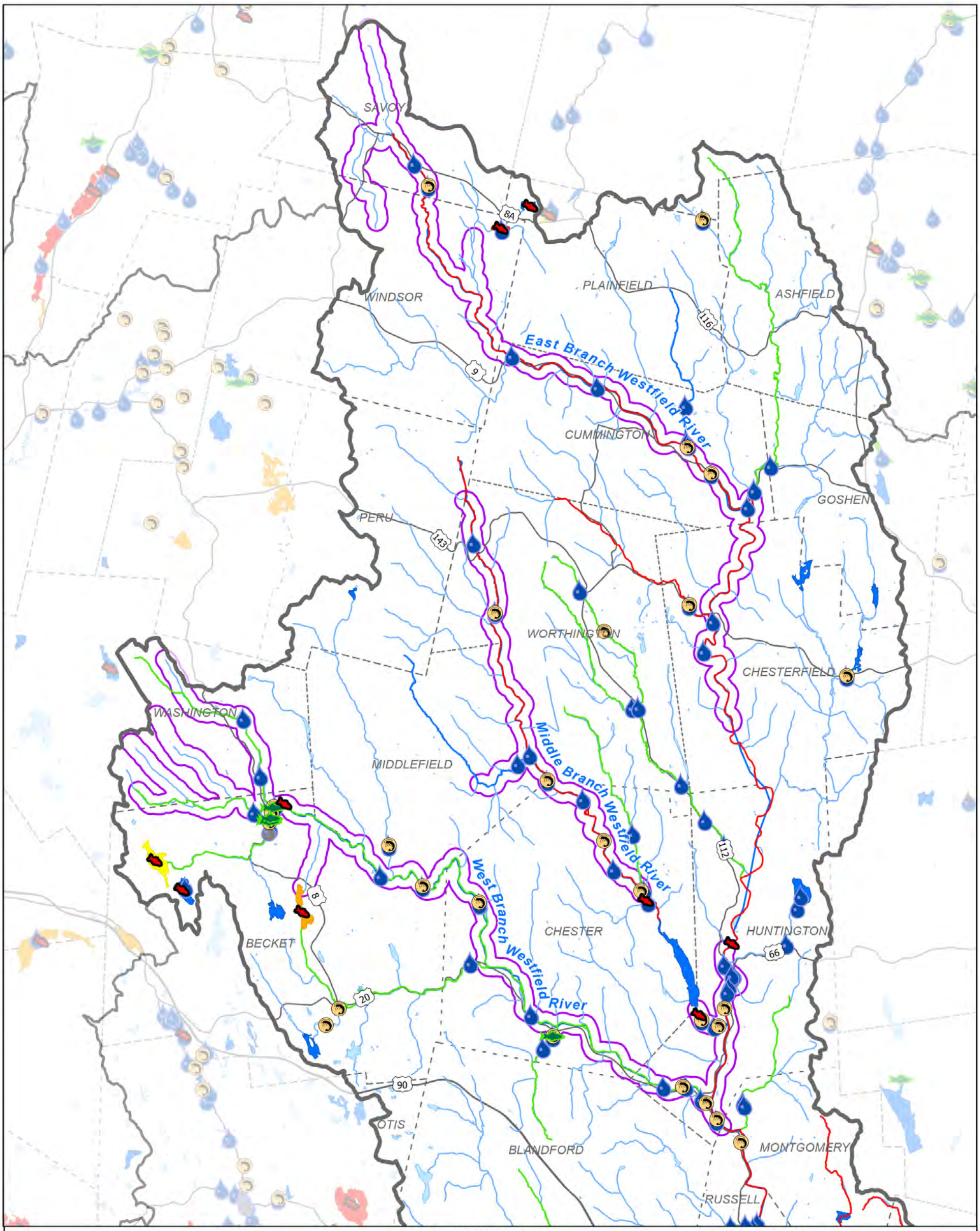

Figure 3-4
Westfield Wild and Scenic River

MassDEP Monitoring Stations and 303(d) / 305(b) Data

Comprehensive Environmental Incorporated

Miles
0 1 2 3 4 5

Data Sources: MassGIS, USGS, NAACC, CEI

- Westfield River
- Wild and Scenic River Segments
- Other Rivers and Streams
- Lake, Pond, or Reservoir
- Major Roads
- Watershed Boundary
- Town Boundaries

MassDEP Monitoring Stations

- Fish Toxics Stations
- Fish Population Stations
- Benthic Macroinvertebrate Stations
- Surface Water
- Discharge

305(b)/303(d) Data

Streams and Waterbodies

- 2 - Attaining some uses; other uses not assessed
- 3 - No uses assessed
- 4A -Impaired - TMDL is completed
- 4C - Impairment not caused by a pollutant
- 5 - Impaired - TMDL required

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3.2.2 Cold Water Fisheries

The Westfield River maintains a diverse riverine fish community and the upper reaches of the watershed offer exceptional habitat for cold water species such as brook trout, slimy sculpin, longnose dace. The lower mainstem provides high quality spawning habitat for three species of migratory fish (American shad, blueback herring, and sea lamprey). The Westfield River is particularly important habitat for shad, hosting one of the largest runs of any Connecticut River tributary. State-endangered lake chub are found only in the upper reaches of the Westfield River in Massachusetts and represent the southern-most extent of this species.

Cold water fisheries in the Westfield River watershed are shown in Figure 3-5. The Massachusetts Surface Water Quality Standards (314 CMR 4) define cold water fisheries as waters in which (1) the mean of the maximum daily temperature over a 7-day period generally does not exceed 68°F, unless naturally occurring, and (2) when other ecological factors are favorable (such as habitat), and are capable of supporting a year-round population of cold water stenothermal aquatic life such as trout.

3.3 Land Protection

The Westfield River watershed contains numerous scenic, natural landscapes and is home to abundant wildlife. Segments of connected natural lands create important wildlife corridors and miles of intact riparian area protect water quality and provide habitat to multiple species. Over 34% of the watershed is considered “Open Space” and is owned and managed by various organizations as shown in Table 3-4 and Figure 3-6.

Multiple maps and plans have been developed which identify priority areas for land conservation. The Pioneer Valley Planning Commission has developed an Open Space and Recreation Plan for the watershed with goal of identifying, preserving, and protecting regionally significant conservation areas, scenic landscapes and resources, and forests for future acquisition.

Table 3-4. Protected and Open Space in the Westfield River Watershed

Ownership	Acres	% of Open Space
State	46,526	41%
Municipal	30,122	27%
Private	20,114	18%
Land Trust	9,384	8%
Federal	4,132	4%
Private Non-Profit	124	<1%
Public Non-Profit	48	<1%
Other	29	<1%
Total:	**113,496**	**100%**

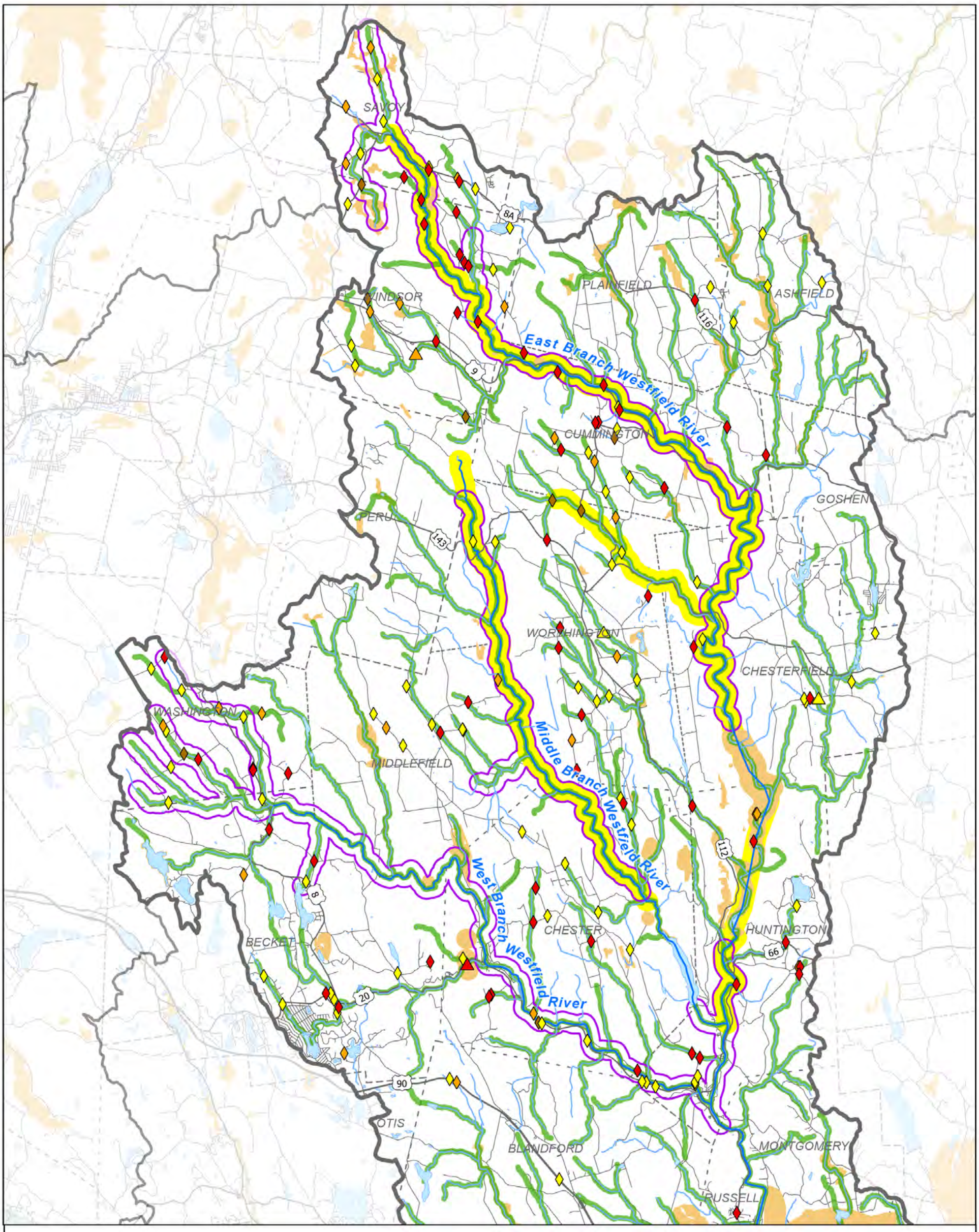

Figure 3-5
Westfield Wild and Scenic River

Stream Barriers, Coldwater Fisheries and NHESP Priority and Estimated Habitats

Comprehensive Environmental Incorporated

Miles
0 1 2 3 4 5

Data Sources: MassGIS, USGS, NAACC, CEI

- Westfield River
- Wild and Scenic River Segments
- Temperature-Impaired River Segments
- Other Rivers and Streams
- Lake, Pond, or Reservoir
- Major Roads
- Minor Roads
- Watershed Boundary
- Town Boundaries
- MA DFW Coldwater Fisheries Resources
- NHESP Priority or Estimated Habitats of Rare Species

Stream Barriers

- Bridge, Minor barrier
- Bridge, Moderate barrier
- Bridge, Severe barrier
- Culvert(s), Minor barrier
- Culvert(s), Moderate barrier
- Culvert(s), Significant barrier
- Culvert(s), Severe barrier

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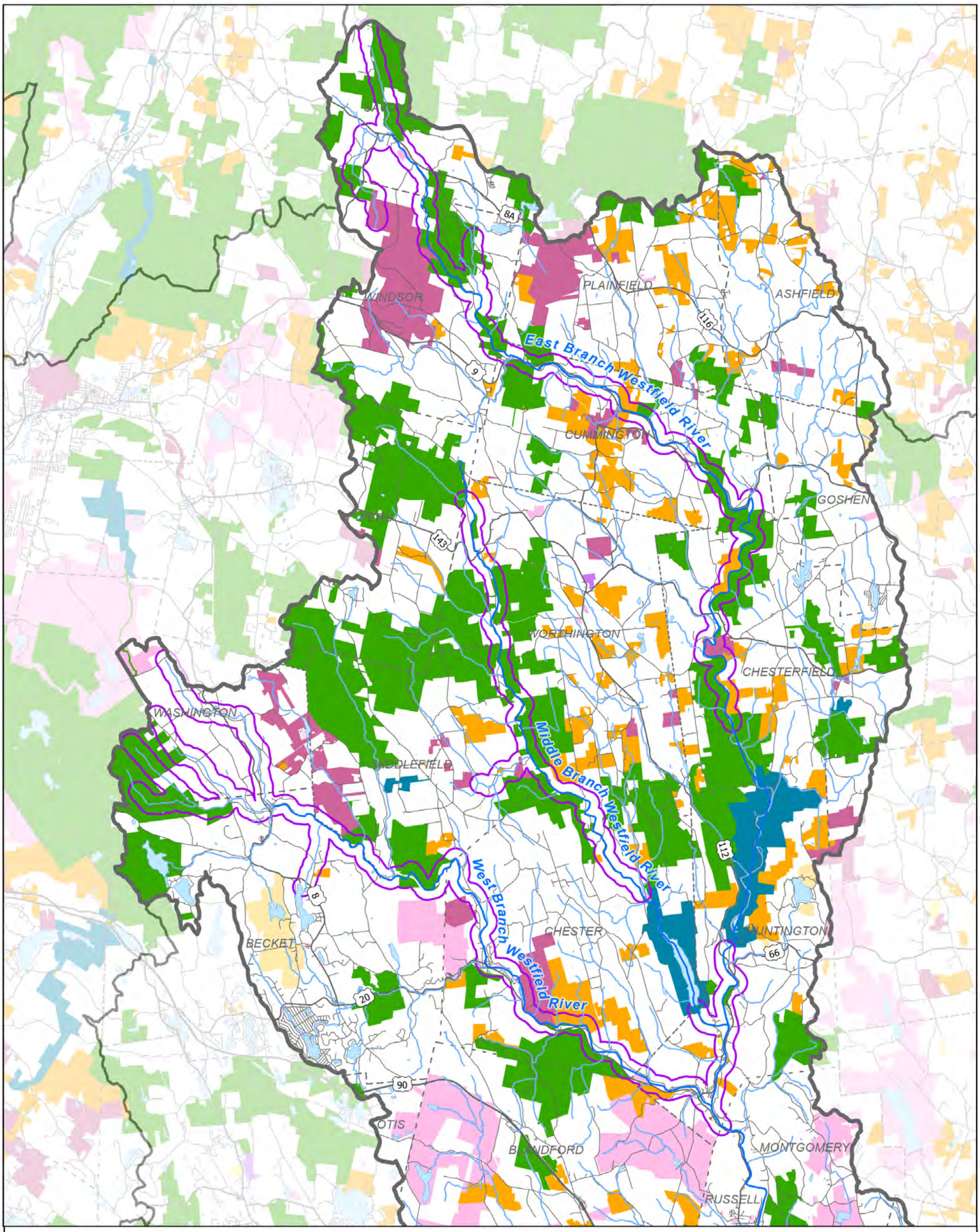

Figure 3-6
Westfield Wild and Scenic River

Protected and Recreational Open Space

Comprehensive Environmental Incorporated

Miles
0 1 2 3 4 5

Data Sources: MassGIS, USGS, NAACC, CEI

- Westfield River
- Wild and Scenic River Segments
- Other Rivers and Streams
- Lake, Pond, or Reservoir
- Major Roads
- Minor Roads
- Watershed Boundary
- Town Boundaries

Protected and Recreational Open Space, by Owner

- Federal
- Conservation Organization
- Land Trust
- Municipal
- Private Non-Profit
- Private
- State
- Other

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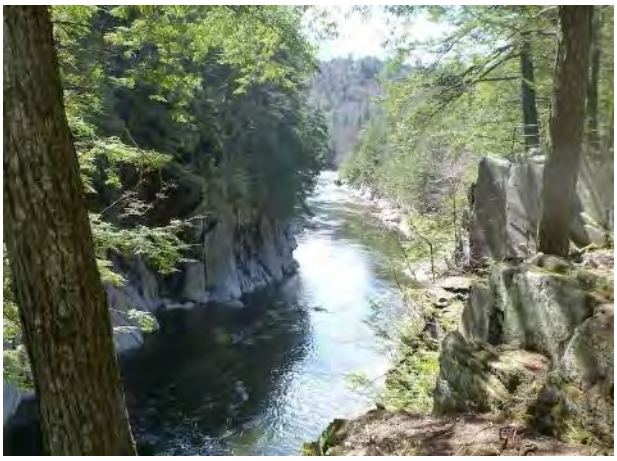
3.4 Scenic, Cultural, and Historic Resources

The Wild and Scenic Westfield River is a popular destination for recreational activities such as fishing, swimming, hiking, camping, kayaking, and canoeing. Multiple unique geologic, scenic, historic, and cultural sites are located throughout the watershed and draw visitors from outside the watershed. The East, West, and Middle Branches of the Westfield River have many significant scenic and recreational resources (Figure 3-7), including the following:

- The **Keystone Arches**, an Historic District listed on the National Register of Historic Places, is a series of ten stone arch railroad bridges located along the West Branch. The bridges were originally built in 1841 by the Boston and Albany Railroad Company.
- **Chesterfield Gorge** in West Chesterfield is a natural river gorge surrounded by granite cliffs. The Gorge is owned by the Trustees of Reservations and provides numerous recreational opportunities.
- **Glendale Falls** in Middlefield is a series of waterfalls 100 to 150 feet high. This resource is also managed by the Trustees of Reservations and provides opportunities for swimming, picnicking, and hiking.
- **Windsor State Forest** includes a thick spruce forest, providing various hiking opportunities. This area includes **Windsor Jambs**, a series of waterfalls flowing through a natural gorge surrounded by high granite walls.
- The East Branch "**Pork Barrel**" in Chesterfield is a four-mile-long gorge with large, deep pools that are popular for swimming.
- The **Appalachian Trail** crosses the watershed through October State Forest in Becket.

The Keystone Arches are located in Becket, Middlefield, and Chester



Chesterfield Gorge

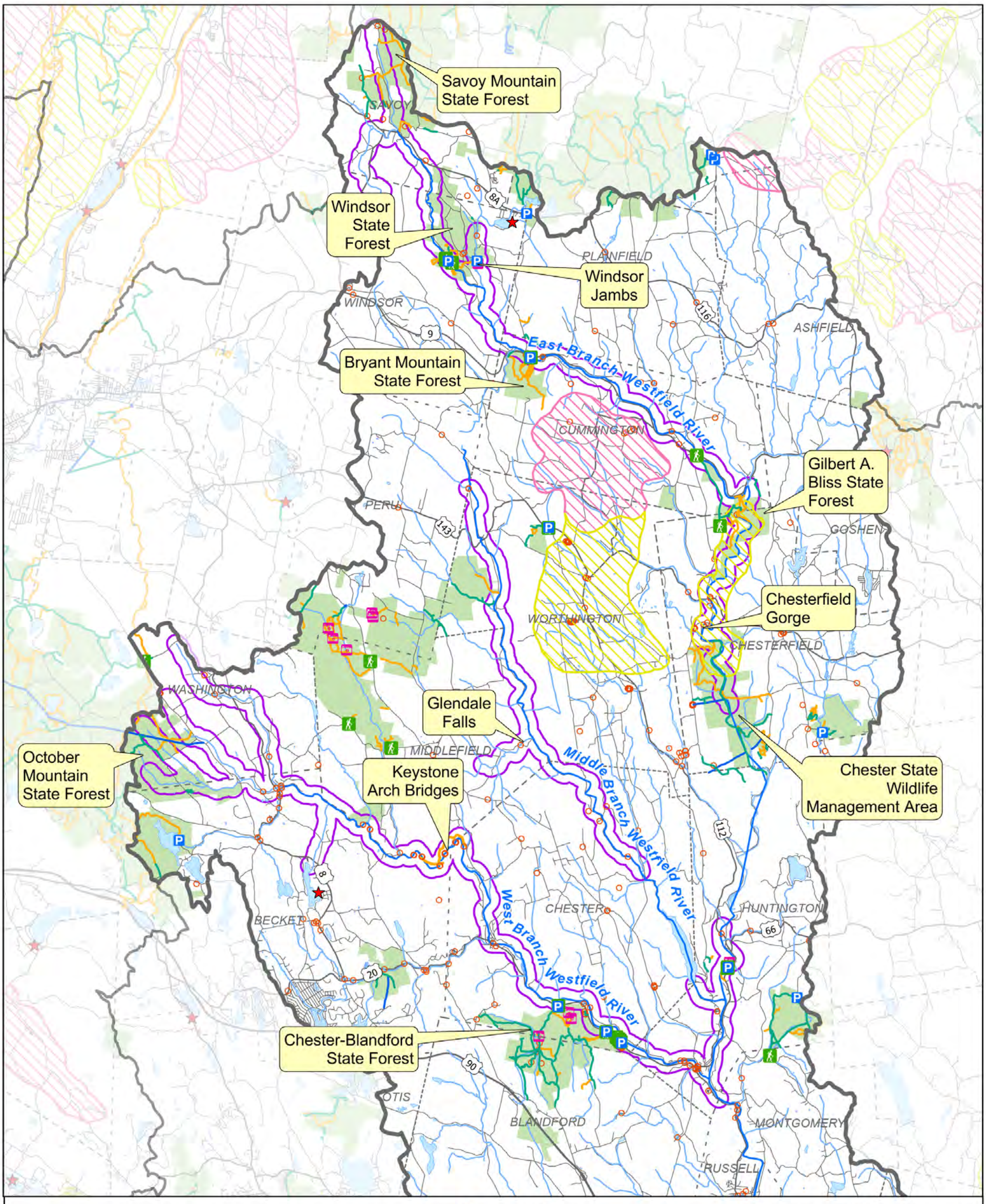


Figure 3-7
Westfield Wild and Scenic River

Cultural, Historic, and Scenic Resources

Comprehensive Environmental Incorporated

Miles
0 1 2 3 4 5

Data Sources: MassGIS, USGS, NAACC, CEI

- Westfield River
- Wild and Scenic River Segments
- Other Rivers and Streams
- Lake, Pond, or Reservoir
- Major Roads
- Minor Roads
- Watershed Boundary
- Public Access to Water
- Historical Object, Structure or Cemetery
- Town Boundaries

The Scenic Landscape Inventory

- Distinctive (Highest Scenic Quality)
- Noteworthy (Significant Scenic Quality)

DCR Roads and Trails

- Parking Area
- Trailhead
- Recreational Site
- Vista
- Forest Road/Trail
- Trail
- Other
- State Forests

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4. Goals and Actions

Goals and actions identified during the workshops described in Section 2 are summarized in Prioritization Matrix (Table 4-1). To identify the highest priority actions for the Wild & Scenic Westfield River, an email was sent to workshop participants and other stakeholders with the matrix and instructions for submitting votes to prioritize actions. The stakeholders responded by email and the votes were then tallied to determine the top priority actions and associated goals as listed in Table 4-1.

4.1 Summary of Priority Issues

The following priority issues for the W&SWR were identified during the planning workshops:

1. **Cold water fisheries** in the headwater streams may be impacted by temperature impairments on the main stem reaches and physical barriers to fish passage such as dams and culverts.
2. **Excellent water quality** throughout the watershed should be evaluated to determine the cause of temperature impairments on the main stem and the potential of any “hotspot” tributaries.
3. **Invasive plants** (aquatic and terrestrial) have increased throughout the watershed, including in the river corridor and riparian areas.
4. **Land protection** is needed to protect important vulnerable riparian areas along the river.
5. **Over-use of recreational areas** is causing environmental degradation in many popular recreation areas.
6. Improved collaboration between cultural/historic resource agencies, municipalities, indigenous groups, and other agencies to manage significant **cultural and historical resources.**
7. **Public education and engagement efforts** between watershed partners should be managed more effectively and additional outreach is needed to guide municipal boards and homeowners on key regularly and land use management issues (e.g., land development, septic systems).
8. **Other priority concerns** included stream bank erosion, unknown contributions of pollutants from septic systems, and the extent that land use activities such as agriculture and forestry practices may impact water quality.

4.2 Top Priority Goals and Actions

The top priority W&SWR goals and associated actions identified during the workshops are presented on the following pages.

The West Branch of the Westfield River

GOAL #1:

Protect and improve the ability of the Wild & Scenic Westfield River to support cold water assemblages.

As discussed in Section 3.2.2., the W&SWR includes a large concentration of cold water streams that provide some of the best cold water fishery habitat in Massachusetts. The stewardship planning process identified continued and improved protection of cold water habitat as a top W&SWR stewardship priority. Issues related to protection of cold water stream habitat in the W&SWR include the following:

- Despite the abundance of high-quality cold water habitat in the watershed, 44 miles of Wild & Scenic stream segments are listed as **impaired for temperature** in the 2016 Massachusetts Integrated List of Waters. Temperature impaired segments are within the Wild & Scenic portions of the Middle Branch and East Branch, as well as the West Falls Branch (a tributary to the Wild and Scenic East Branch). Discussion during the Water Resources workshop noted that:

    1. The temperature impairments described above were within wide stream reaches lacking the high degree of shading found in smaller tributaries; and
    2. It was unclear among participants how much the temperature impairments were influenced by natural stream features (i.e., width and associated shade canopy) rather than anthropogenic causes that could be addressed with mitigation actions.

> *"The most unique aspects of the Westfield Basin are its large concentration of **cold water streams with wild brook trout** and relatively minimal human development."*
>
> Pre-workshop survey response

- As climate change progresses, the threats to cold water stream habitat are expected to increase. These threats include higher temperatures that directly impact streams and can also alter riparian areas by changing the species composition of forests that provide canopy shade.

- In addition to shifting riparian forests towards species adapted to a warmer climate, climate change can also increase the presence of tree-damaging insects such as the emerald ash-borer, and of other tree stressors such as fungal pathogens. Widespread loss of native forest canopy to these stressors can lead to less stream shading and impacts to cold water stream habitat.

- Increases in chlorides such as road salt also have a negative impact on cold water habitat. Road de-icing practices in the watershed should be carefully evaluated to minimize such impacts.

High Priority Actions for Cold Water Fishery Protection

1. The W&SWRSC should work with the MassWildlife Coldwater Fisheries Program (CWFP) to **prioritize tributaries for further assessment and protection of cold water fish habitat**. This would include meeting with CWFP staff to reach agreement on the CWFP leading this action, priority tributaries, and on the types of future stream assessment and analysis that the CWFP would conduct for tributaries to the W&S Westfield River.

2. W&SWRSC should request technical **clarification and guidance from MassDEP regarding the temperature impairments** described above. Clarification is needed with regard to the following:

- How are temperature impairments determined for mainstem reaches?
- How are "naturally occurring" conditions, as referenced in the Massachusetts Surface Water Quality Standards, factored into these impairment listings?
- What conditions trigger impairments in the mainstem segments of the Middle Branch and East Branch, but not the West Branch?

This coordination with MassDEP is intended to ensure that the future actions to mitigate temperature impairments are focused on areas where problems are fixable and not due to naturally occurring conditions in wide reaches.

3. W&SWRSC should work with a contractor or intern to **review existing water quality data to determine "hotspot" tributaries** and point sources that may contribute to warmer temperatures. This data review should also determine specific stream reaches where warmer temperatures may be naturally occurring as wider sections of the river are warmed by the sun. This assessment could also include identifying where beaver impoundments or other natural flow restrictions are contributing to "naturally occurring" warmer temperatures in impounded stream reaches.

Funding and Partnership Considerations

Many of the actions identified to protect the W&SWR cold water fisheries involve coordinating with organizations already conducting work in the watershed. MassWildlife's CWFP is responsible for surveying cold water fisheries from July to mid-September and MassDEP is responsible for assessing statewide water quality data to determine impairments. Coordination with these agencies is a first step towards addressing cold water fisheries assessment and protection in the headwater tributaries of the W&SWR. This initial coordination with state agencies should not require funding.

Through coordination with MassWildlife and MassDEP, an initial assessment of "hotspot" tributaries could also be conducted. Additional funding may be necessary to hire a contractor to provide further review and analysis of existing water quality data to identify other areas of concern. Potential funding sources for these actions may be obtained through the National Fish and Wildlife Foundation or the Massachusetts Division of Fisheries and Wildlife as described in Section 5.4 (Habitat Improvement Program).

GOAL #2:

Improve stream habitat connectivity for the Wild & Scenic Westfield River, with a focus on removal of physical barriers to passage and fish and other wildlife.

Stream channels and adjacent riparian corridors are critical to the movement of aquatic and terrestrial wildlife across the landscape, together with materials (large and small woody debris, organic detritus, and naturally occurring nutrients) that affect their habitat. If a stream is interrupted by an obstruction such as a bridge, road crossing, culvert, or dam, then essential ecological infrastructure may be impaired and habitat areas along the stream corridor may become isolated from each other (a condition referred to as "fragmentation"). The stewardship planning process identified **improving stream habitat connectivity** as a top W&SWR stewardship priority.

The ability for wildlife to move throughout stream corridors is essential for many reasons, including:

> *"**Aquatic connectivity and high quality in-stream habitat** are incredibly important to maintaining good ecosystem functioning and resilient aquatic organism populations."*
>
> Pre-workshop survey response

- Access to feeding areas (needs vary among species and for life-stages within species);
- Access to shelter and refuge from predators and seasonal changes in flow and temperature (needs vary among species and for life-stages within species);
- Access to cold water habitats (aquatic organisms are often sensitive to temperature);
- Access to areas with conditions suitable for spawning and breeding;
- Access to allow populations to exploit new habitats and to sustain natural population growth or prevent population decline; and
- Access for interaction with other groups of individuals to maintain genetically healthy populations.

For the reasons listed above, obstruction of movement can have adverse consequences not only to individual organisms, but to larger populations of species and assemblages of species. While dams may prevent passage of fish and other aquatic organisms, other obstructions (e.g., culverts, bridges) may also result in the disruption of wildlife movement, including:

- Outlet drops (perching), which pose structural barriers to passage of many aquatic organisms;
- Drops at culvert inlets, either as a result of initial installation or subsequent sediment and debris deposition and associated channel alteration, which also pose structural or hydraulic barriers to passage;
- Inadequate flow depths under ordinary low flow conditions (not due to drought), which do not provide minimum depths essential for aquatic organisms to move;
- High velocities under a variety of flow conditions, ranging from low flows to seasonal high flows (especially flows occurring during periods of migration). At prevailing velocities during the period when they need to move, organisms must have sufficient swimming ability and endurance to move upstream;

- Scouring and erosion;
- Clogging by natural or urban debris;
- Pond formation upstream of culverts as a result of clogging, sediment deposition, or inadequate culvert size;
- Installation of unnatural bed materials within the structure;
- Lack of retention of natural streambed materials within crossing;
- Lack of sufficient “dry bank” under prevailing flow conditions. The absence of banks or shallow stream margins inhibits the terrestrial movement of animals that do not use the water column or streambed material for travel, but that typically move along the stream bank and riparian corridor.

A “perched” culvert on River Road in Windsor, preventing fish passage and resulting in scour at the outlet.

High Priority Actions for Improving Stream Connectivity

1. **Prioritize road crossing improvements** based on highest potential ecological benefit. Climate change factors (e.g., the increasing frequency of intense precipitation events) should be considered in the prioritization process. Improvement may include removal of obstructions, rehabilitation or replacement of existing undersized structures, or addition of fish/wildlife passage features.
2. Once road crossings are prioritized, **work with structure owners (e.g., towns) to determine their priority sites for improvement** and determine funding source for improvement. Consider bundling technical services (engineering, design, permitting) for multiple high-priority sites to allow for cost savings and greater regional benefit. This approach could also improve competitiveness if funding is sought through Massachusetts Municipal Vulnerability Preparedness (MVP) Action Grant (as regional grant).
3. Review MADER's Dam Removal Model to understand their prioritization for dam removal. **Work with DER to determine funding sources/priorities for dam removal**.

Funding and Partnership Considerations

The North Atlantic Aquatic Connectivity Collaborative (NAACC) has an online database of steam connectivity assessments conducted since June 2015. Many of the culverts and stream crossings in the Westfield River watershed have been assessed through this program and data is available online. Accessing and reviewing these data and coordinating with MADER and MassWildlife’s CWFP are a first step in prioritizing road crossings for improvement.

Funding sources available for stream crossing improvements include the Culvert Replacement Municipal Assistance Grant Program from MADER and the New England Forests and Rivers Fund - Bring Back the Natives program from the National Fish and Wildlife Foundation (described in Section 5.4). If it is determined that a stream crossing or culvert may be at risk due to climate change, the MVP Program described in Section 5.5 should be considered.

GOAL #3:

A comprehensive and coordinated approach to invasive species management is needed to protect high-quality stream and riparian habitat for the Wild & Scenic Westfield River.

Invasive species are plants and animals that are introduced to new ecosystems that may cause harm to the environment. Many of these species are introduced accidentally but once present, compete with native plants and wildlife for resources, disrupt beneficial relationships, spread disease, kill, or significantly alter ecosystem function. Invasive species found in the Westfield River watershed include insects like the emerald ash borer and hemlock woolly adelgid, and plants including garlic mustard, Japanese knotweed, glossy buckthorn, and oriental bittersweet.

The damage caused by invasive species to native species and habitats can be extensive and expensive to address. Climate change may exacerbate the impacts of invasive species as warmer temperatures and increased precipitation will expand the range of species that may thrive in Massachusetts. Extreme weather events could also allow for the dispersal of invasive species to new regions via transportation of seeds, larvae, and small animals.

> *"Invasive plants are a threat that needs broad and well-funded management."*
>
> Pre-workshop survey response

The Westfield River Watershed Invasive Species Partnership (WISP) is a local partnership with a primary goal of promoting cooperative efforts to manage invasive species and protect native habitats in the watershed through education, early detection, eradication, and management. WISP's Steering Committee has representation from the Nature Conservancy, Massachusetts Audubon Society, the Trustees of Reservations, Westfield State University, the W&SWRC, and the Massachusetts Department of Conservation and Recreation (DCR).

Monitoring for invasive species and early identification of infestations provides enormous environmental and economic benefits. Some key locations of invasive species identified during the workshop include:

- Knightville Dam Basin
- Bisbee Mills on Dead Branch
- Middle Branch (along River Road)
- East Branch in Windsor

The planning workshops and pre-workshop interviews identified that invasive species management is a high priority for the W&SWR, including the high priority actions listed below.

<u>High Priority Actions for Invasive Species Management</u>

1. **Coordinate with WISP** and other organizations to organize existing data on invasive species.
2. **Map invasive species** areas in the watershed. W&SWRC's Stream Teams could be trained to identify invasive species.
3. Develop a **Comprehensive Invasive Species Management Plan** for the Westfield River watershed.

Funding and Partnership Considerations

Multiple organizations are working to address invasive species in the Westfield River watershed. Coordination with these organizations is a first step towards developing a comprehensive approach to invasive management.

Japanese Knotweed, an invasive plant species found in the Westfield River watershed

Training the W&SWRC's Stream Teams to identify invasive species could be funded through an environmental education grant program (see Section 5.2: Environmental Education Programs) such as USEPA's Environmental Education Grants Program and the National Environmental Education Foundation Grants Program. Other relevant grant programs with an education focus include the CSX Community Investment Grants as described in Section 5.7: Other Programs.

Other grant programs may also be used to fund invasive species management efforts if it can be demonstrated that invasive species are impacting habitat or recreational trails:

- MADER's Restoration Priority Projects Program focuses on stream restoration and river revitalization (Section 5.4: Habitat Improvement Programs)
- MassTrails Grants can be used to maintain recreational trails (Section 5.7: Other Programs).
- As invasive species are expected to increase with climate change, the MVP Grant Program could be used to address invasive species (Section 5.5: Climate Resiliency Program)

Invasive species have begun to spread through the Knightville Dam Basin in Huntington, MA

GOAL #4:

A comprehensive visitor use management plan is needed to protect recreational areas in the Wild & Scenic Westfield River from impacts associated with over-use.

As described in Section 3, the W&SWR is widely used for recreational activities such as fishing, swimming, hiking, camping, kayaking, and canoeing. Multiple unique geologic, scenic, historic, and cultural sites also attract visitors. The need to manage recreational uses in the W&SWR and throughout the watershed was identified as a top priority issue during the planning workshops and pre-workshop interviews. Problems identified include:

- Visitation exceeding carrying capacity in some popular areas
- Erosion and trampled vegetation
- Trash and lack of trash receptacles
- Lack of adequate parking
- Lack of bathroom facilities

"Recreation access is hampered by myriad State and private agencies managing properties with individual mandates rather than a comprehensive planning strategy."

Pre-workshop survey response

These issues are occurring in both official and unofficial recreational areas, including state parks, road pull-offs, ATV trails, and river access trails.

The workshops identified that recreation access and management is not well-coordinated as federal, state, and private agencies manage properties with separate priorities. Watershed partners that manage recreational lands include the Trustees of Reservations, the Becket Land Trust, the Hilltown Land Trust, The Nature Conservancy, the Chester Railway Station, Jacob's Ladder Scenic Byway**,** MADCR Office of Cultural Resources**,** Town/State historical commissions, Friends of the Keystone Arches, and others. Developing a watershed-wide visitor use management plan would allow for coordination among multiple watershed partners and promote a long-term, sustainable approach to recreational access in the W&SWR.

<u>High Priority Actions for Recreational Use Management</u>

1. Identify **grant funding opportunities** to develop a watershed-wide visitor use management plan.
2. Develop a **list of key recreational resources, property owners, and contact information** for each resource. This is a first step to promoting improved coordination among the multiple watershed partners who could contribute to the plan.
3. **Develop a watershed-wide visitor use management plan.** The plan should include an assessment of bathroom facilities, parking, and high use areas that may need additional staffing. A similar plan is currently being developed for the Wild and Scenic Farmington River which could serve as a guide for plan development.

Funding and Partnership Considerations

Developing a watershed-wide visitor use management plan would require coordination among the multiple entities that manage recreational areas within the W&SWR and elsewhere in the watershed. Funding options for this effort include:

- MADCR's Land and Water Conservation Fund (LWCF) (Section 5.3: Conservation Programs) funds planning grants for analytic studies on recreation potentials and needs and may be used for this type of plan.

A typical road pulloff along Route 20 in Chester is used for unofficial river access.

GOAL #5:

Improved public outreach coordination between the W&SWRC and watershed partners is needed to improve citizen engagement in protecting the Wild & Scenic Westfield River, and to make best use of limited financial and staff resources.

The W&SWRC has multiple programs and projects focused on engaging citizens in the long-term protection, restoration, and conservation of the river and its resources, including:

- **Stream Team Surveys**: Since the 1990s, annual Stream Team surveys have been conducted to document river corridor conditions. These surveys identify follow-up actions which help shape the annual priorities of the W&SWRC, including actions such as river and trail workdays and cleanups, planting of native species to stabilize banks, and macroinvertebrate sampling.

> *"Increased partnerships with cultural stewardship agencies, historical commissions and societies, and municipal staff are necessary."*
>
> Pre-workshop survey response

- **School Programs**: The W&SWRC sponsors river educational programs for kindergarten through grade 12, working to engage children and families in the protection of the river and its resources. These programs include exhibits at community events, the Becket Washing Elementary School's Stream Explorer Program, the U.S. Fish and Wildlife's Conte Refuge's Watershed on Wheels program, a summer Teen River Clean project, and an on-going partnership with the Westfield River Environmental Center at Westfield State University.

- **General Education and Outreach**: The W&SWRC has developed multiple education and outreach programs to engage watershed citizens through a combination of mailings, outreach materials, workshops, hikes and public programs, and Stream Team trainings. The goal of these efforts is to increase public understanding and engagement in the long-term protection, restoration, and conservation of the river and its resources.

- **Website**: The W&SWRC hosts a website to publicize events and provide information and educational resources about the W&SWR. Much of the information on this website is out of date, with references to programs that are no longer active or provides links that no longer work.

Other watershed partners conduct public outreach in the Westfield River watershed including WISP, Mass Audubon, TTOR, DCR, the Friends of the Keystone Arches, The Nature Conservancy, and many others. Multiple actions identified during the three workshops and pre-workshop interviews suggested that coordinating with these watershed partners is a priority for the long-term success of education and outreach programs within the watershed.

High Priority Actions for Public Outreach Coordination

1. The W&SWRC should evaluate current educational and outreach programs to determine which programs are successful and are the best use of limited organizational resources.

2. **Identify areas to expand educational programs.** During the workshops, it was noted that additional outreach is needed to help guide municipal boards and homeowners on key regulatory and land use management issues such as land development bylaws and septic system management. As part of the evaluation of existing education and outreach programs, the W&SWRC should consider additional educational programs that may be more effective than current programs.

3. **Hire a paid, knowledgeable manager/administrator for the W&SWRC to coordinate activities in the watershed**. The W&SWRC is currently comprised of volunteer representatives and alternates appointed by local elected officials, the Commonwealth, or appropriate authorities. The only paid employee is a part-time outreach coordinator. As identified during the workshop process, multiple organizations conduct work in the watershed including the Westfield River Watershed Association, the Westfield River Watershed Invasive Species Partnership, the Trustees of Reservations, the Pioneer Valley Planning Commission, the Berkshire Regional Planning Commission, the National Park Service, the Massachusetts Department of Ecological Restoration, and others. Although many of the goals and work of these organizations overlap, there is currently no coordination between these organizations with regard to public outreach. Hiring a paid staff member would allow the W&SWRC to (1) conduct more outreach programs and (2) coordinate efforts with other watershed partners to improve the overall reach and scope of outreach promoting the goals of the W&SWRC.

Funding and Partnership Considerations

Current funding for the part-time Outreach Coordinator position is provided as part of the annual funds coordinated by the National Parks Service from Congress as part of the Wild and Scenic Designation. Program and technical assistance for the W&SWRC is provided by staff at the MA-DER.

Additional funding and resources are required to update the strategic goals of the W&SWRC and hire a full-time staff person for the W&SWRC. Potential project partners include the NPS Rivers, Trails, and Conservation Assistance (RTCA) Program (see Section 5: Funding for more details), to develop a comprehensive program and refine strategic goals of the W&SWRC. The RTCA Program does not provide monetary grants but provides professional assistance to organizations like the W&SWRC to identify other funding sources that may be available for additional paid staff.

Other funding mechanisms that may be available to assist with public education priorities include the USEPA's Environmental Education Grants Program and the National Environmental Education Foundation Grants Program (see Section 5.2: Environmental Education Programs). Other relevant grant programs include the CSX Community Investment Programs (see Section 5.7: Other Programs).

Table 4-1: Wild & Scenic Westfield River Stewardship Matrix

Issue	Location(s)	Vulnerability or Strength	Proposed Actions	Responsible Parties	Priority	Timeframe (Short, Long, Ongoing)
Water Quality						
Excellent water quality supports cold water fishery.	Headwater streams	S	W&SWRSC should work with the MassWildlife Coldwater Fisheries Program (CWFP) to prioritize tributaries for further assesment and protection of cold water fish habitat.	MassWildlife CWFP (lead); W&SWRSC	H	S
Temperature impairments on the main stem reaches.	East Branch and Middle Branch	V	W&SWRSC should request technical clarification/guidance from MassDEP regarding existing temperature impairments to assess how impairment is determined for mainstem reaches and how "naturally occurring" conditions are factored into this determination. This is to ensure that future actions to mitigate temperature impairments is focused on areas where problems are fixable and not due to naturally occurring conditions in wide reaches.	MassDEP (lead); W&SWRSC	M	S
			Work with a contractor/intern to review existing water quality data to determine "hotspot" tributaries and point sources that may contribute to warmer temperatures as well as determine specific reaches where warmer temperatures may be naturally occurring as wider sections of the river are warmed by the sun. This assessment could also include identifying where beaver impoundments are contributing to "naturally occurring" warmer temperatures in impounded stream reaches.	contractor or intern on behalf of W&SWRSC	M	L
Stream bank erosion occurs at multiple locations.	Multiple locations, with initial focus on one stream segment in each W&S branch for pilot projects: ● Depot Brook (West Branch) ● East Branch segment through Windsor ● Kinne Brook (Middle Branch; continue ongoing work)	V/S	Multiple years of data sheets from the annual Stream Walks have not been reviewed, developed into a GIS layer, or converted to electronic (e.g. MS Excel) format. Work with contractor/intern to review and make data accessible in GIS and spreadsheet formats (e.g. ArcGIS Survey123 or similar).	contractor or intern on behalf of W&SWRSC	M	0
			Work with contractor/intern to conduct a GIS exercise to determine areas of unhealthy riparian areas that may contribute to stream bank erosion.		M	S
			Once existing data has been reviewed, prioritize areas for nature-based solutions in the river corridor; Use prioritized areas/actions as basis for future MVP Action Grants or other grant funding sources.		M	L
Septic systems along the river corridor have potential to contribute nutrients and bacteria to the Westfield River.	Watershed properties within 300 feet of the Westfield River and its tributaries	V	Review existing nutrient and bacteria data to determine areas where septic systems are a potential pollutant source to the W&SWR reaches. If septic system problem areas are identified, work with a contractor/local BOH/MassDEP to determine the best course of action. Actions may include identifying specific failing systems through (1) a septic system environmental risk analysis, or (2) follow-up field investigations to confirm suspected failures; conducting a review of local septic system regulations for opportunities to strengthen including the development of pump-out ordinance; and/or develop a septic system-focused homeowner outreach program.	contractor on behalf of W&SWRSC; local Boards of Health	L	L
Stream Channel Connectivity						
Physical barriers to fish passage (dams, culverts, etc.) prevent native species from traveling upstream to headwater streams and cause increased water temperatures at dam impoundments.	Multiple locations	V	Prioritize road crossing improvements based on highest potential ecological benefit. Improvement may include removal, rehabilitation, or addition of fish/wildlife passage features where non-existent. Once prioritized, work with structure owners (e.g., towns) to determine their priority sites for improvement. Determine funding source for improvement (MVP, USFWS National Fish Passage Program, etc.). Consider bundling technical services (engineering, design, permitting) for multiple high-priority sites to allow for cost savings and greater regional benefit - this could also improve competitiveness if funding is sought through MVP Action Grant (as regional grant).	MADER; W&SWRSC; Towns	H	S
	Multiple locations, including: ● Windsor State Forest Dam ● Woronocco Village dam (downstream of W&S, but affects fish movement to upstream reaches)	V	Review DER's Dam Removal Model to understand their prioritization for dam removal Work with DER to determine funding sources/priorities for dam removal.	W&SWRSC, MADER; CT River Conservancy; W&S Farmington River	M	L
Land Protection						
Land protection (through acquisition, conservation easements, other real estate tools) is needed to protect particularly important and vulnerable riparian areas along the river. Multiple intact riparian areas protect water quality. Some parcels that have the potential to be developed may impact fish passage and connectivity of wildlife habitat corridors. Many of these lands are privately owned.	Watershed-wide	V	Multiple maps identifying priority areas for conservation have been developed by various organizations with varying goals. Work with a contractor/intern to identify all existing prioritized conservation maps and develop a list of priority areas that are specific to the W&SWR. This will require periodic updates. This effort should involve a "summit" of conservation stakeholders in the watershed (including Towns, land trusts, etc.) to help achieve consensus on priorities. These efforts include identification and consideration of significant cultural/historical resources within potential conservation parcels.	W&SWRSC, Towns, land trusts (will require grant funding or additional paid staff)	M	L
			Continue to pursue land acquisition for 16-acre parcel in Chesterfield (River Rd., near Chesterfield Gorge) which is planned for sale by auction by Town of Chesterfield.	Town of Chesterfield, W&SWRSC	--	S
			Identify opportunities for municipal or regional funding for conservation/land planning efforts through: ● EOEEA planning assistance grants. These grants are available to municipalities (and RPAs acting on their behalf) to support efforts to plan, regulate (zone), and act to conserve and develop land consistent with the Massachusetts' Sustainable Development Principles. ● ACOE Planning Assistance to States program, which funds plans for the development, utilization, and conservation of water and related land resources. ● MA Land and Water Conservation Fund Grant Program (includes acquisition of conservation land for municipalities with an up-to-date Open Space and Recreation Plan) ● National Fish and Wildlife Foundation (NFWF) grants	W&SWRSC; EOEEA; ACOE; NFWF; Towns	M	S
Land Use						
Agricultural activities along river corridor may be negatively impacting water quality.	Multiple locations; Moose Meadow Brook	V	Review land use maps (contractor/intern) to identify location of agricultural land use; Review water quality data in downstream reaches to determine potential impacts and opportunities for improvements. As needed, coordinate with USDA-NRCS and MADAR on next steps for funding and implementing agricultural BMPs.	contractor on behalf of W&SWRSC; USDA-NRCS	L	L
Forestry activities may impact water quality.	Multiple locations	V	Determine if forestry practices are negatively impacting water quality, aquatic resources, and habitat in the Westfield River. Work with a contractor/intern to review land use maps, riparian area maps, and specific locations of intense forestry activity. Work with DCR to include the W&S corridor on DCR Forestry Stewardship Plan. For areas with opportunities for improvements, coordinate with US Forestry Service and MADCR-Forest Stewardship Program on next steps for funding/ implementing forestry BMPs.	contractor on behalf of W&SWRSC; USFS; MADCR	L	L
Native Plant Communities / Invasive Species						
Increase in non-native, invasive plants throughout the watershed, including in the river corridor and riparian areas.	Multiple locations, including: ● Fields at Knightville Dam Basin (black swallow wort, honeysuckle, buckthorn, Japanese knotweed, coffee vine): ● Bisbee Mills on Dead Branch (Conte refuge); ● Middle Branch (road to headwaters) ● East Branch, Windsor (knotweed)	V	Identify funding options to develop an invasive species program in the watershed (e.g., similar to program in W&S Farmington River). Funds could be for an intern/staff to map invasives and identify target problem areas, including collection/organization of existing data from WISP other sources such as the NIACS Forest Adaptation Management Resources (https://forestadaptation.org/adapt/forest-adaptation-resources). Use this information to develop a comprehensive invasive species plan to be implemented over 5-10 years, focusing efforts on priority areas identified in the mapping exercise.	W&SWRSC (with additional funded staff); WISP	H	S
			Train Stream Teams in invasive species identification and use these volunteers as an early warning system for new infestations. Focus this effort of pristine areas and small tributaries/upper watershed areas.	Stream Teams; W&SWRSC;	M	L

Recreation						
Recreational over-use is causing environmental degradation in some popular W&S areas. This is occurring in both official and unofficial recreational areas, including state parks, road pull-offs, ATV trails, and river access trails. Problems include erosion, trampled vegetation, trash, etc. Many of these areas lack adequate parking, bathroom facilities, and trash receptacles. Recreation access/management is not well coordinated as federal, state and private agencies manage properties with separate priorities. Increased recreation at swimming areas can disrupt shoreline and in-stream habitat.	Multiple locations, including: ● Keystone Arch Bridges Trail ● East Branch (River Road) ● Sanderson Brook (Route 20) ● Bear Pools (Dead Branch) ● Glendale Falls ● Gardner State Park ● Littlefield Dam swimming hole ● Pork Barrel	V	With grant funding, develop a watershed-wide visitor use management plan in cooperation with watershed partners. This plan could be developed using an approach similar to the visitor use/visitation study currently being developed for the W&S Farmington River. The plan should include an assessment of bathroom facilities, parking, and high use areas that may need additional staffing, etc.	W&SWRSC (lead), with participation from MADCR, land trusts, Towns, etc.	H	S
Cultural/Historical Resources						
A significant amount of cultural/historical sites and structures (buildings, mills etc.) are located throughout the Westfield River watershed. Improved collaboration/cooperation is needed between cultural/historic resource agencies, municipalities, indigenous groups, and other agencies to manage significant resources.	Watershed-wide	V	Work with a contractor/intern to develop a comprehensive list and map of cultural and historical resources in the W&S Westfield River corridor, similar to the conservation lands map described above. Tasks may include: conducting a literature review of existing data from local historical commissions and ensuring that all data is in a consistent and accessible format; analyzing State GIS historical data; reaching out to tribal groups and State archaeologists familiar with Native American sites to ensure that these sites are documented and protected etc.	W&SWRSC (lead), with participation from Tribal Historic Preservation Officers; town/state historical commissions, MADCR Office of Cultural Resources	L	L
Private ownership of cultural/historic resources limits public access and restoration/preservation.	Multiple locations, including: ● Keystone Arch Bridges (Gator Tail) ● Historic buildings on Middle Branch ● Mills/dam/house complexes on East Branch ● Historic buildings in Becket	V	Work with property owners to determine status of cultural/historic resources at risk and restoration needs of site.	W&SWRSC	M	L
			At specific sites such as the Keystone Arch Bridges where the owner (CSX) has shown little engagement, research liability of owner for safety concerns (Gator Tail is at highest risk). Consider options for legal action.	W&SWRSC	L	L
Public Education and Engagement						
Lack of public outreach coordination between watershed partners including W&SWRSC, WISP, Mass Audubon, TTOR, DCR, and others.	Watershed-wide	V	Identify funding sources to hire a paid, knowledgeable manager/facilitator/administrator for the W&SWRC to coordinate public outreach efforts. Specify the role and duties of the position and determine salary, benefits, oversight, office needs, etc.	W&SWRSC (with funding for additional staff or intern/contractor)	H	S
Additional outreach is needed to help guide municipal boards and homeowners on key regulatory and land use management issues (e.g., land development bylaws, septic system management) that are important to long-term stewardship of the W&SWR	Watershed-wide	V	Work with contractor/intern to review local bylaws and regulations to identify areas to strengthen or develop local bylaws such as subdivision and site plan regulations, land conservation, septic system pumpout ordinances, etc., and provide examples of model bylaws to towns.		M	L
			Work with planning boards/conservation commissions to conduct outreach to new homeowners as development expands to the Hill Towns, including use of septic systems, wells, lawn care, plant choices etc. Develop educational materials for homeowners on these topics.		M	O
Expand existing watershed-wide education program.	Watershed-wide	V	Review existing education/outreach programs. Determine successful programs and messaging platforms and identify areas to expand educational outreach. Determine if other platforms such as social media should be used, and for which types of outreach.		M	S

5. Funding Source Assessment

The Wild and Scenic Westfield River receives annual budget allocations from the National Park Service and Scenic Rivers Funding. These monies are intended to implement the actions identified in the Stewardship Plan as well as overall program administration. Securing additional funding is necessary to address many of the actions identified in this plan. A summary of potential funding sources is below.

Planning and Implementation Programs

319 Nonpoint Source Grant Program

Agency: Massachusetts Department of Environmental Protection (MassDEP)

The 319 Grant Program provides funds to control nonpoint source pollution. These grants can be used to help restore impaired water bodies and to protect high quality water bodies. An EPA-approved, nine-element watershed-based plan is required for application. A minimum of 40% non-federal match is required for these grants.

604b Water Quality Management Planning Grant Program

Agency: Massachusetts Department of Environmental Protection (MassDEP)

The 604b grant program provides funds for water quality assessment and management planning. In cases where water body data is limited or does not exist, information collected through these grant projects (e.g., water quality monitoring) can provide the foundation to support 319 grant projects. No local match is required for these grants.

Rivers, Trails, and Conservation Assistance (RTCA) Program

Agency: National Park Service (NPS)

The RTCA program supports community-led natural resource conservation and outdoor recreation projects. NPS partners with community groups, nonprofit organizations, tribes, and government agencies to assist local communities in realizing their conservation and outdoor recreation vision and goals by providing a broad range of services and skills. This is a non-monetary grant, but provides free, on-location facilitation and planning expertise. NPS staff provide help to define project vision and goals, inventory and map community resources, identify and analyze key issues and opportunities, engage collaborative partners and stakeholders, design community outreach and participation strategies, develop concept plans for trails, parks, and natural areas, set priorities and build consensus, identify funding sources, and develop a sustainable organization framework to support priority projects.

Environmental Education Programs

Environmental Education Grants Programs

Agency: United States Environmental Protection Agency (USEPA)

Under the Environmental Education Grants Program, EPA seeks grant applications from eligible applicants to support environmental education projects that promote environmental awareness and stewardship and help provide people with the skills to take responsible actions to protect the environment. This grant program provides financial support for projects that design, demonstrate, and/or disseminate environmental education practices, methods, or techniques.

National Environmental Education Foundation Grants
Agency: National Environmental Education Foundation (NEEF)

NEEF offers a variety of grants and awards to help organizations engage their local community to improve the environment, increase diversity, and expand their work locally. NEEF provides nearly $700,000 in grants and awards annually to educational (both formal and informal) and public land partners across the country. Grantees have led service events dedicated to the restoration, resilience, and conservation of public lands, worked with the National Park Service on professional training and development, coordinated with the US Forest Service on conservation activities, and engaged in place-based environmental education efforts.

Conservation Programs

Massachusetts Division of Conservation Services Grants

- The Land and Water Conservation Fund (LWCF) conserves land and improves outdoor recreation opportunities, working in partnership with federal, state and local efforts to protect land in national parks, national wildlife refuges, national forests, national trails, and other public lands; to preserve working forests and ranchlands; to support state and local parks and playgrounds; to preserve battlefields and other historic and cultural sites; and to provide the tools that communities need to meet their diverse conservation and recreation needs. The National Park Service provides matching grants to States and local governments for the acquisition and development of public outdoor recreation areas and facilities. Funding is provided for the acquisition of park and recreation lands, development of recreation facilities, redevelopment of older recreation facilities, and planning grants for studies on recreation potentials, needs, opportunities, and policies.
- The Conservation Partnership Grant funds the acquisition of conservation land by non-profit entities. Potential projects include the acquisition of the fee interest in land or a conservation restriction and due diligence for land or a conservation restriction that was donated.
- The Local Acquisitions for Natural Diversity (LAND) Grant program helps municipalities acquire land for conservation and passive recreation purposes. The grants reimburse the municipality for the acquisition of land in fee or for a conservation restriction.
- The Landscape Partnership Grant Program advances the large-scale connectivity of conservation lands to sustain the integrity and resilience of ecosystems and the viability of local farm and forest economies. Its purpose is to facilitate complex large-acreage projects, increase the leveraging of state financial investments, expand partnerships among federal, state, municipal, and non-profit entities, enhance the stewardship of conservation land, and expand public outdoor recreational opportunities. The program provides funding to assist municipal, state, federal, and non-profit partners in acquiring interests in lands suitable for conservation purposes, including undeveloped lands, farms and forests, water supply lands, unique ecosystems, rare species habitats, and restored lands. The grant is particularly intended to enable projects that stretch beyond the scope of other state land grant programs and standard spheres of operation.
- The Parkland Acquisitions and Renovations for Communities (PARC) Grant Program assists municipalities in acquiring and developing land for parks and outdoor recreation. These grants can be used by municipalities to acquire parkland, build parks, or to renovate an existing park.
- The Drinking Water Supply Protection Grant Program protects land serving as an existing well or reservoir or land that will serve a planned future well or reservoir.

Habitat Improvement Programs

Massachusetts Division of Ecological Restoration (DER) Grant Programs

Agency: Massachusetts Department of Fish and Game

- The Culvert Replacement Municipal Assistance Grant Program is for municipalities interested in replacing an undersized, perched, and/or degraded culvert located in an area of high ecological value. This funding is to encourage replacement of aging culverts with better designed crossings that meet improved structural and environmental design standards and flood resiliency criteria.
- The Restoration and Revitalization Priority Projects Program selects projects that restore and protect Massachusetts rivers, wetlands, and watersheds for the benefit of people and the environment. The Priority Projects Program selects ecological and urban stream revitalization projects that present significant benefits to Massachusetts. Eligible applicants include restoration project site landowners, non-profit and/or non-governmental organizations, regional planning organizations, municipalities, and state and federal agencies. Current project focus is on cranberry bog wetland restoration, stream restoration, and urban stream and river revitalization.

MassWildlife Habitat Management Grant Programs

Agency: Massachusetts Division of Fisheries and Wildlife

The MassWildlife Habitat Management Grant Program provides assistance to private and municipal owners of protected lands to enhance wildlife habitat while promoting public access for outdoor recreation. The primary objectives of the program include improving habitat for game species, managing habitat for Species of Greatest Conservation Need, and promoting public recreational opportunities for hunting, fishing, trapping, and other wildlife associated recreation on conserved lands.

National Fish and Wildlife Foundation (NFWF) Grant Programs

Agency: National Fish and Wildlife Foundation

- New England Forests and Rivers Fund provides grants for restoring and sustaining healthy forests and rivers that provide habitat for diverse native bird and freshwater fish populations in New England. The program annually awards competitive grants ranging from $50,000 to $200,000 each. Past projects have included restoration of early successional and mature forest habitat, modification and replacement of barriers to fish movements, restoration of riparian and instream habitat, and volunteer engagement in forest habitat restoration and stream connectivity projects.
- Bring Back the Natives is a grant program that seeks to restore, protect, and enhance native fish species and conservation concern nationwide. The program funds over $500,000 annually with a focus on four key strategies: restoring connectivity; restoring riparian and instream habitat and water quality; invasive species management; and innovation.

Bird Habitat Assessment Program

Agency: Massachusetts Division of Conservation and Recreation in partnership with Mass Audubon

The DCR Bird Habitat Assessment Program provides funding and assistance to landowners to work with a consulting forester or other qualified professional to evaluate existing and potential habitat for a selection of birds.

Climate Resiliency Programs

Municipal Vulnerability Preparedness (MVP) Grant Program
Agency: Massachusetts Executive Office of Energy and Environmental Affairs

The MVP Grant Program provides support for cities and towns in Massachusetts to being the process of planning for climate change resiliency and implementing priority projects. The state awards communities with funding to complete vulnerability assessments and develop action-oriented resiliency plans. Communities who complete an MVP planning grant become certified as an MVP community and are eligible for MVP Action Grant funding and other opportunities.

Agricultural Programs

Natural Resources Conservation Service (NRCS) Financial Assistance Programs
Agency: United States Department of Agriculture

- Environmental Quality Incentives Program (EQIP) provides financial and technical assistance to agricultural producers to address natural resources concerns and deliver environmental benefits such as improved water and air quality, conserved ground and surface water, reduced soil erosion, and improved wildlife habitat.
- Conservation Stewardship Program (CSP) is the largest conservation program in the United States with a goal of enhancing natural resources and improving agricultural operations. The program helps agricultural operations build on existing conservation efforts while strengthening their operations. The program focuses on improving grazing conditions, increasing crop yields, developing wildlife habitat, and increasing resilience to weather extremes.

Climate Smart Agriculture Program (CSAP) Grants
Agency: Massachusetts Department of Agricultural Resources (MDAR)

MDAR offers grants and funding programs for agricultural projects. The CSAP Program links MDAR's water, energy, and climate grants into one application. This program implements projects that help the agricultural sector adapt to climate change, mitigate climate change, reduce or prevent impacts to natural resources that may result from agricultural practices, and that improve energy efficiency and facilitate adoption of alternative clean energy technologies.

Other Programs

MassTrails Grants
Agency: Massachusetts Department of Conservation and Recreation (DCR)

MassTrails provides matching grants to communities, public entities, and non-profit organizations to design, create, and maintain the diverse network of trails, trail systems, and trails used by Massachusetts residents and visitors. Eligible grants activities include project development, design, engineering, permitting, construction and maintenance of recreational trails, shared use pathways, and the amenities that support trails.

CSX Community Investment Programs
Organization: CSX

CSX Community Investment grants are available for projects that focus on safety, wellness, community, and the environment. Examples of fundable projects include teaching environmental stewardship, planting eco-friendly trees and plants, leading/supporting environmental clean-ups, and promoting energy efficiency. The average grant size is $5,000.

State Revolving Fund (SRF) Clean Water Program

Agency: MassDEP

The SRF Clean Water program provides a low-cost financing method to help communities meet water quality standards. The program addresses issues such as watershed management priorities, stormwater management, and green infrastructure. SRF also supplies financial assistance to address communities with septic systems.

Summaries of other grant programs can be found at:
https://www.mass.gov/files/documents/2016/08/vg/grants-directory.pdf

6. Conclusions and Next Steps

Chesterfield Gorge in Chesterfield, MA

This Stewardship Plan was developed through the work of W&SWRC and a broad range of stakeholders with the common goal of ensuring the long-term health and protection of the W&SWR. The top priority goals identified for the W&SWR during the stewardship planning process are as follows:

- Protect and improve the ability of the W&SWR to support cold water assemblages.
- Improve stream habitat connectivity for the W&SWR, with a focus on removal of physical barriers to passage and fish and other wildlife.
- A comprehensive and coordinated approach to invasive species management is needed to protect high-quality stream and riparian habitat for the W&SWR.
- A comprehensive visitor use management plan is needed to protect recreational areas in the W&SWR from impacts associated with over-use.
- Improved public outreach coordination between the W&SWRC and watershed partners is needed to improve citizen engagement in protecting the W&SWR, and to make best use of limited financial and staff resources.

Some of the actions identified in this Plan (see Table 4-1) can be completed by the W&SWRC in collaboration with watershed partners. For other actions, additional funding is likely to be required. Next steps, project partners, and specific funding sources to consider are outlined for each priority action.

This Stewardship Plan should be revisited periodically and as specific actions are implemented, to ensure that priorities are properly focused for the long-term protection of this unique and valuable resource.

Appendices

Appendix A: Kickoff Meeting Summary

Appendix B: Pre-workshop interviews

Appendix C: Workshop materials

Appendix A: Kickoff Meeting Summary

Wild & Scenic Westfield River Stewardship Plan
Kickoff Meeting, June 11, 2020

A kick-off meeting for the Wild & Scenic Westfield River Stewardship Plan project was held on June 11, 2020 from 6:30-8 pm via Zoom. The goals of this meeting were to introduce the project, review project goals and objectives, discuss the planned project approach, review the project schedule, and identify next steps.

Participants

Carl Cignoni – Wild & Scenic Westfield River Committee (W&SWRC) Chair, Chesterfield
David Pierce – Chester
David Zink – Windsor
Jim Caffrey – Committee Secretary, Windsor
Carol Waag – Middlefield
Bob Thompson – Chester
Amy Polia – Cummington
Dee Cormier – Chesterfield
Meredyth Babcock – Outreach Coordinator
Jake Lehan – MA Division of Ecological Restoration
Bob Hartzel - CEI
Emily DiFranco – CEI

Agenda

1. Introductions, including review of project roles and responsibilities
2. Discuss protocol for communications between CEI, the W&SWRC, and other stakeholders
3. Review the project goals, objectives, and outcomes
4. Review the planned project approach for Tasks 2-4
5. Discuss potential list of stakeholders for Task 3 (Stakeholder Outreach and Engagement Plan) and sources for existing contact information
6. Review list of technical references, data, and other information to be used by CEI as background for development of the Stewardship Plan
7. Review project schedule, including specific calendar milestone for tasks and deliverables
8. Identify next steps and summarize action items

Project Communication

- General communication from CEI will be sent via email to everyone on the Committee.
- Specific communication about contracts and invoicing will go through Cindy Delpapa, Committee Treasurer.

Data and Report Resources

In advance of the workshop, CEI provided a list of data and report resources compiled to date (*see list at end of meeting summary*). The Committee will email any missing data or reports to CEI. Other resources discussed by the W&SWRC included:

- 2015 survey of road stream crossings conducted by MAACC (Jake Lehan)
- Nature Conservancy assessment of wildlife corridors in the Berkshires (Jake Lehan)
- Regional Open Space Plan (Jim Caffrey)
- Keystone Arches Plan (David Pierce)
- Data available from the Silvio O. Conte National Fish and Wildlife Refuge
- MassWildlife cold-water fisheries/climate refugia studies

Planned Project Approach Task 2: Develop and Implement Planning Process

Working with the W&SWRC, CEI will develop and implement a planning process to rank and prioritize threats, opportunities, actions and projects given current and future conditions in the Westfield River watershed. This process includes a Stakeholder Workshop which will be modeled after the Community Resilience Building (CRB) workshop format developed by The Nature Conservancy, but will include a broader scope to include all issues relevant to the Wild & Scenic Westfield River and its watershed. The process is expected to include:

- Key stakeholder interviews to identify key vulnerabilities and strengths within the river/watershed.
- Preparation of base maps and other reference materials to be used during the workshop.
- Outreach to ensure workshop participation.
- An in-person Stakeholder Workshop that includes four guided exercises:
    1. Identify the top big-picture planning/stewardship categories for the Wild & Scenic Westfield River
    2. Identify vulnerabilities and strengths within the river/watershed
    3. Identify specific actions to meet the short- and long-term stewardship goals for the Wild & Scenic Westfield River
    4. Prioritize actions for implementation

Stakeholder Workshop

- Options for conducting the Stakeholder Workshop in light of the ongoing COVID-19 pandemic were discussed. The W&SWRC reached consensus that in-person workshop held at an outdoor venue would be preferred given the internet limitations of much of the area. Options for people that may not be able to attend an all-day workshop will be developed based on further discussion with the W&SWRC (e.g., digital formats for people to (1) review workshop materials and results and (2) provide input and feedback for incorporation into the Stewardship Plan).
- To ensure maximum attendance given the COVID-19 limitations, the W&SWRC will work to determine an appropriate outdoor location, such as a covered pavilion in a centrally located park or fairgrounds in the watershed. Locations proposed included the Cummington picnic area, the Littleville Fairgrounds in Chester, the Middlefield Fairgrounds, and a park in Worthington.

- A date will be determined for the workshop once the location has been chosen.
- Potential stakeholders to invite to workshop include:
    - W&SWRC
    - Other watershed organizations
    - Outdoor enthusiasts who use the watershed (anglers, paddlers, hiking groups)
    - Municipal staff and Town officials (e.g., Town Planners, DPW Directors, representatives from each Town's Board of Selectmen, Planning Board, Conservation Commissions, etc.)
- Outreach for the workshop may include utilizing:
    - Town, watershed organization, and other Facebook pages.
    - Town, watershed organization, and other websites.
    - Meredyth Babcock's contact list.
    - Partnerships with local land trusts
    - Targeting specific state and conservation NPO partners (e.g., MACC, Massachusetts Rivers Alliance, MA Land Trust Alliance, etc.)
    - Berkshire Regional Planning Commission and Pioneer Valley Planning Commission
    - Post flyers at trailheads and new kiosks in the watershed

Planned Project Approach for Task 3: Stakeholder Outreach and Engagement

As part of the Stewardship Plan, CEI will develop an on-going, multi-year outreach plan to engage stakeholders in the watershed, and to inform citizens about the Stewardship Plan and how they can get involved. This task will build upon the work completed in the Stakeholder Workshop (Task 2) and the current outreach work being conducted in the watershed. Potential specific tasks to include in this outreach plan may include:

- Identifying funding sources to hire additional staff to apply for grants, manage projects, supervise interns, and perform other general administrative tasks.
- Updating the W&SWR website.
- Providing new website content which highlights completed projects and the benefits provided to river water quality, recreational use of the river, etc.
- Other recommendations as listed in CEI's project proposal.

Questions/Comments from Committee/CEI

Jake Lehan: Will CEI use the same headings as used in the CRB Guide (Infrastructure, Societal, Environmental)?

- Bob Hartzel: Four categories are proposed: Ecological, Infrastructure, Societal, and Other

Jim Caffrey: Will the National Park Service limit the scope of this planning process to the water and riparian areas?

- Carl Cignoni: Will check with NPS but does not expect scope to be limited as these issues are watershed issues.

Carol Waag: How can we make sure this does not overlap with the MVP workshops?

- Bob Hartzel: There will be some overlap, but the MVP workshops focus solely on issues related to climate change. This workshop will look at a much broader range of issues that include all stewardship considerations for the Wild & Scenic Westfield River.
- Carl Cignoni: Need to engage people and show that this is different than the MVP process.

Bob Hartzel: Pre-workshop interviews should include stakeholders with a range of local knowledge. Any initial thoughts on 5-6 candidates?

- Carl Cignoni: W&SWRC will brainstorm. We should include representatives that are familiar with each of the three major branches of the Wild a& Scenic Westfield River.
- Jake Lehan: The W&SWRC and DPW directors.

Dee Cormier: Who will design questions for the pre-workshop interviews?

- Bob Hartzel: Currently being developed and will be submitted as part of the Task 2 draft memorandum detailing the planning process for input from the W&SWRC.

Next Steps

- CEI will develop a draft framework for the Stakeholder Workshop and submit to the Committee for discussion at their next meeting on June 25, 2020.
- The Committee will obtain and forward any additional data and/or report resources to CEI.
- The Committee will begin to determine an appropriate location for the Stakeholder Workshop.

Available Information and Data for the Westfield River Watershed

Background Information

- Article on history of Westfield River (15 in 40 Wild.doc)
- Article on history of Westfield River in Becket (Wild and Scenic Becket History DRAFT#3_CB.doc)

Westfield Wild and Scenic Water Quality Data

- MassDEP Data from 2005-2018
  - Includes data for multiple projects and locations throughout Westfield River watershed
  - Data for dissolved oxygen, pH, temperature, and specific conductance (450 data points)
  - Data from discrete samples measuring metals, nutrients, bacteria, chloride, alkalinity, chlorophyll-a (2,899 data points)
  - Data from unattended data probes measuring temp. and dissolved oxygen (119 data points)
- MassDEP Data from 1994-2004
  - Includes data for multiple projects and locations throughout Westfield River watershed; Data for dissolved oxygen, temp., specific conductance, pH, total dissolved solids, bacteria, nutrients, chloride, TSS, chloride, chlorophyll-a, and alkalinity (1,273 data points)
- USGS Streamflow Data (2006-current)
- Blitz 2015 and 2016 GPS Points

Previous Projects/Reports

- Wild and Scenic Strategic Plan Summary (2011-2016)
- Westfield and Deerfield River Watershed 2011-2012 Post-Irene Macroinvertebrate Recovery Monitoring (2013)
- Kinne Brook 2012-2013 Pre-restoration Macroinvertebrate Assessment (2013)
- Westfield River Water Quality Monitoring Project (2008)
- Freshwater Mussel Inventory of the Wild and Scenic River (2009)
- Executive Summary: East Branch (2007)
- Shoreline Survey Report: East Branch (2007)
- Executive Summary: Middle Branch (2007)
- Shoreline Survey Report: Middle Branch (2007)
- Executive Summary: West Branch (2007)
- Shoreline Survey Report: West Branch (2007)
- Westfield River Watershed 2001 Water Quality Assessment Report (published 2005)
- Rt. 112 / Jacob's Ladder Trail Scenic Byways Trail Linkages Project Proposal (Trails proposal.doc)
- Solicitation for road-stream crossing replacement projects (Stream Crossing Site Assessment Nomination.pdf)

Volunteer Tracking

- 2012 Annual Report (A Year by The Numbers.doc)
- 2018 Annual Report (2018 Leverage.xls)

General Wild and Scenic Information

- Wild and Scenic River Management Responsibilities (US Forest Service)

Appendix B: Pre-workshop interviews

Pre-Workshop Survey Questions: Water Resources Working Group

1. What is your name?

   Chris Curtis

2. What is the name of your community/company/organization/institution/agency? How long have you been involved with them?

   I am a co-owner of the consulting firm, Conservation Works and retired Chief Planner at Pioneer Valley Planning Commission (40 years)

3. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date?

   I originated the efforts to secure Wild and Scenic designation in 1993, and oversaw the entire designation process.

4. What do you believe is unique or special about the Westfield River's water resources?

   Water quality is Class A, or drinking quality in many segments.

5. What do you believe are some of the key issues regarding water resources for the W&SWR? *Issues could include topics such as water quality, aquatic ecology, aquatic habitat connectivity, stream channel integrity, aquatic invasive species, etc.*

   Protecting high quality drinking water, removal of dams in the watershed, preventing new dams.

6. Are you aware of key areas of the watershed that are significant in regards to water resources? *Be as specific as possible (e.g., location of culvert needing improvement for fish passage, area of river bank erosion, water quality "hot spot", etc.).*

   The Middle Branch has outstanding water quality.

7. Have you noticed any changes in issues regarding water resources (e.g., changes in water quality, habitat, etc.)?

   No

8. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining the quality of water resources for the W&SWR?

   Preventing water quality degradation from stormwater runoff, septic systems, etc.

9. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts; recommended actions, etc.?

   N.a.

10. What do you believe may be the biggest obstacle to addressing issues regarding water resources for the Westfield River?

    Need for better regulations.

11. What additional actions would you like to see taken to address any current issues regarding water resources or to further protect the W&SWR?

    Better water quality regulations. Removal of dams, large and small, throughout the watershed.

12. Do you have any other information related to water resources that would be useful in developing this Stewardship Plan?

Pre-Workshop Survey Questions: Terrestrial Resources Working Group

1. What is your name?

   Chris Curtis

2. What is the name of your community/company/organization/institution/agency? How long have you been involved with them?

   I am a co-owner of the consulting firm, Conservation Works and retired Chief Planner at Pioneer Valley Planning Commission (40 years)

3. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date?

   I originated the efforts to secure Wild and Scenic designation in 1993, and oversaw the entire designation process.

4. What do you believe is unique or special about the terrestrial resources of the W&SWR watershed??

   Large blocks of wilderness quality lands, unique in Massachusetts.

5. What do you believe are some of the key issues regarding terrestrial resources for the Westfield River? *Issues could include topics such as terrestrial habitat, forest integrity and connectivity (e.g., wildlife corridors), conservation areas, native communities, etc.*

   Development and logging, new roads. Some key natural features needing protection are in private ownership, for example, West Worthington Falls, the Pork Barrel.

6. Are you aware of key areas of the watershed that are significant in regards to terrestrial resources? *Be as specific as possible (e.g., location of potential improvement in forested buffer, high priority parcel for land conservation, important bird habitat areas, etc.).*

   Yes, but these are all well documented in the Greenway Plan. I would say the Pork Barrel section of the East Branch in one of the most untouched wilderness areas in the state.

7. Have you noticed any changes in issues regarding terrestrial resources (e.g., development trends reducing forested buffer, increase in invasive species, shifts in wildlife populations?)

   Incremental development of homes along the river, increased recreational use is damaging resources.

8. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining the quality of terrestrial resources for the W&SWR?

   Continued development of homes and logging.

9. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts, recommended actions, etc.?

   N.a.

10. What do you believe may be the biggest obstacle to addressing issues regarding terrestrial resources for the Westfield River?

    Lack of local enforcement of river protection zoning.

11. What additional actions would you like to see taken to address any current issues regarding terrestrial resources or to further protect the W&SWR?

    Land acquisition to protect particularly important and vulnerable lands along the river. Prioritization of lands for projection.

12. Do you have any other information related to terrestrial resources that would be useful in developing this Stewardship Plan?

Pre-Workshop Survey Questions: Cultural/Recreational Resources Working Group

1. What is your name?

   Chris Curtis

2. What is the name of your community/company/organization/institution/agency? How long have you been involved with them?

   I am a co-owner of the consulting firm, Conservation Works and retired Chief Planner at Pioneer Valley Planning Commission (40 years)

3. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date?
   I originated the efforts to secure Wild and Scenic designation in 1993, and oversaw the entire designation process.

4. What do you believe is unique or special about the cultural, historic, and recreational resources of the W&SWR and its watershed?

5. What do you believe are some of the key issues regarding cultural resources and land uses for the W&SWR? Issues could include topics such as recreational access, cultural landscape/historic character, scenic resources, citizen education/engagement, etc.

   Recreational over-use of the river corridor.

6. Are you aware of key areas of the watershed that are significant in regards to cultural, historic, and recreational resources as listed above? Be as specific as possible (e.g., location of scenic vistas at risk of development, historic/cultural sites requiring protection, recreational access areas needing improvement, opportunities to improve citizen education/engagement with signage, etc.).

7. Have you noticed any changes in issues regarding cultural/historic/recreational resources?

   The river has become extremely heavily used for recreation, especially this past summer, and particularly along the East Branch Trail. This is due to the easy vehicle access to remote river sections on the East Branch Trail. As a result, I have noted new trails created, trash, overuse and overall degradation of some of the most beautiful and sensitive sites along the trail.

8. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining cultural/historic/recreational resources for the W&SWR?

   Increasing popularity and recreational overuse, leading to environmental degradation.

9. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts; recommended actions, etc.?

   N.a.

10. What do you believe may be the biggest obstacle to addressing issues regarding cultural/historic/recreational resources for the W&SWR?

    Lack of management of recreation and vehicles along the river.

11. What additional actions would you like to see taken to address any current issues regarding cultural/historic/recreational resources or to further protect the W&SWR?

    I think it is very important to close off the East Branch to vehicular traffic, at the upstream end, immediately adjacent to the TTOR parking lot.

Pre-Workshop Survey Questions: Water Resources Working Group

13. What is your name? Denise Cormier

12. What is the name of your community/company/organization/institution/agency? How long have you been involved with them? Resident of Chesterfield since 1983, founding president Hilltown Land Trust,

14. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date? Chesterfield Alternate for W&SWR; volunteer surveyor for East Branch for numerous years (while the program was in effect)

15. What do you believe is unique or special about the Westfield River's water resources? I know mostly the east branch and intimately know the Dead Brand (Long Pond) as I live on the south end. The East Branch is its diversity & scenic beauty. The Dead Branch - is its wildness, its habitat diversity, its wildness (untouched, not overrun), its habitat diversity.

16. What do you believe are some of the key issues regarding water resources for the W&SWR? *Issues could include topics such as water quality, aquatic ecology, aquatic habitat connectivity, stream channel integrity, aquatic invasive species, etc.* A key issue is how to help to maintain these unique areas, preservation and conservation. The East Branch desperately needs assistance with controlling visitation and vehicle traffic; residents of Chesterfield will no longer go there on the weekend because of how many people visit, the trash they bring and the vehicles they drive down River Road. The Conte Refuge has opened visitation to Long Pond and is not monitored. As it becomes more popular, visitation could easily negatively impact the unique wildness of that area.

17. Are you aware of key areas of the watershed that are significant in regards to water resources? *Be as specific as possible (e.g., location of culvert needing improvement for fish passage, area of river bank erosion, water quality "hot spot", etc.).* NA

18. Have you noticed any changes in issues regarding water resources (e.g., changes in water quality, habitat, etc.)?

    Significant changes to river bank erosion and overuse on River Road on the East Branch

19. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining the quality of water resources for the W&SWR?

    The East Branch desperately needs assistance with controlling visitation and vehicle traffic; residents of Chesterfield will no longer go there on the weekend because of how many people visit, the trash they bring and the vehicles they drive down River Road. The Conte Refuge has opened visitation to Long Pond and is not monitored. As it becomes more popular, visitation could easily negatively impact the unique wildness of that area

20. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts; recommended actions, etc.?

    Westfield Wild and Scenic has volunteer records for surveying for many years for both the East Branch and Dead Branch.

21. What do you believe may be the biggest obstacle to addressing issues regarding water resources for the Westfield River?

    Curtailing vehicle traffic on the East Branch while still enabling those with fishing licenses to access areas downstream

22. What additional actions would you like to see taken to address any current issues regarding water resources or to further protect the W&SWR?

    Be super cognizant and active about maintaining the unique quality of the Westfield River, especially in the hilltowns as they become ever more popular.

23. Do you have any other information related to water resources that would be useful in developing this Stewardship Plan? NA

Pre-Workshop Survey Questions: Terrestrial Resources Working Group

13. What is your name? Denise Cormier

13. What is the name of your community/company/organization/institution/agency? How long have you been involved with them? Chesterfield Resident since 1983, Wild and Scenic alternate for Chesterfield, founding president Hilltown Land Trust

14. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date? Wild and Scenic alternate for Chesterfield, volunteer surveyor Each Branch and Long Pond

15. What do you believe is unique or special about the terrestrial resources of the W&SWR watershed?? Wildness, diverse habitat

16. What do you believe are some of the key issues regarding terrestrial resources for the Westfield River? *Issues could include topics such as terrestrial habitat, forest integrity and connectivity (e.g., wildlife corridors), conservation areas, native communities, etc.* Maintaining wildlife corridors

17. Are you aware of key areas of the watershed that are significant in regards to terrestrial resources? *Be as specific as possible (e.g., location of potential improvement in forested buffer, high priority parcel for land conservation, important bird habitat areas, etc.).* Wildness area of Dead Branch

18. Have you noticed any changes in issues regarding terrestrial resources (e.g., development trends reducing forested buffer, increase in invasive species, shifts in wildlife populations?) NA

19. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining the quality of terrestrial resources for the W&SWR? Over use

20. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts, recommended actions, etc.? Unsure

21. What do you believe may be the biggest obstacle to addressing issues regarding terrestrial resources for the Westfield River? Over use as the area becomes more popular

22. What additional actions would you like to see taken to address any current issues regarding terrestrial resources or to further protect the W&SWR? Become cognizant and active in protecting these areas from overuse

23. Do you have any other information related to terrestrial resources that would be useful in developing this Stewardship Plan? NA

Pre-Workshop Survey Questions: Cultural/Recreational Resources Working Group

14. What is your name? Denise Cormier

15. What is the name of your community/company/organization/institution/agency? How long have you been involved with them? Wild and Scenic alternate for Chesterfield, founding president Hilltown Land Trust, Chesterfield resident since 1983

16. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date? Alternate for chesterfield and volunteer surveyor East Branch and Dead Branch

17. What do you believe is unique or special about the cultural, historic, and recreational resources of the W&SWR and its watershed? Its unique wildness and diversity of habitat and species

18. What do you believe are some of the key issues regarding cultural resources and land uses for the W&SWR? *Issues could include topics such as recreational access, cultural landscape/historic character, scenic resources, citizen education/engagement, etc.* Over use as these areas become ever more popular

19. Are you aware of key areas of the watershed that are significant in regards to cultural, historic, and recreational resources as listed above? *Be as specific as possible (e.g., location of scenic vistas at risk of development, historic/cultural sites requiring protection, recreational access areas needing improvement, opportunities to improve citizen education/engagement with signage, etc.).*

    Bear Pools on the Dead Branch (over use and markings), erosion from off road vehicles, vehicular traffic on River Road along the East Branch, loss of wildness of Long Pond and other parts of the Dead Branch with visitation etc. One of the things that has kept Long Pond and the Dead Branch as wild and diverse as it has been has been the lack of access to the pond For example, In the past few years that the Cote Refuge has opened up the area, I have noticed changes in the number of bird species that are frequenting Long Pond.

20. Have you noticed any changes in issues regarding cultural/historic/recreational resources?

21. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining cultural/historic/recreational resources for the W&SWR? Over use eventually destroying some of the uniqueness of this area.

22. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts; recommended actions, etc.? I would assume that the Nature Conservancy has information as I worked with them over the last decade to help to preserve the bordering land along Long Pond

23. What do you believe may be the biggest obstacle to addressing issues regarding cultural/historic/recreational resources for the W&SWR? Over use

24. What additional actions would you like to see taken to address any current issues regarding cultural/historic/recreational resources or to further protect the W&SWR? Protection of this area as it becomes more populated

25. Do you have any other information related to these issues that would be useful in developing this Stewardship Plan?

Pre-Workshop Survey Questions: Water Resources Working Group

24. What is your name? Erin Rodgers

25. What is the name of your community/company/organization/institution/agency? How long have you been involved with them? Trout Unlimited. I have worked here for 8 years.

26. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date? I have been involved since 2016, TU (and my co-worker before me) have been involved since 2013 or 2014.

27. What do you believe is unique or special about the Westfield River's water resources? The cold, clean water of the upper Westfield watershed is becoming increasingly uncommon.

28. What do you believe are some of the key issues regarding water resources for the W&SWR? *Issues could include topics such as water quality, aquatic ecology, aquatic habitat connectivity, stream channel integrity, aquatic invasive species, etc.* Aquatic connectivity and high quality in-stream habitat are incredibly important to maintaining good ecosystem functioning and resilient aquatic organism populations.

29. Are you aware of key areas of the watershed that are significant in regards to water resources? *Be as specific as possible (e.g., location of culvert needing improvement for fish passage, area of river bank erosion, water quality "hot spot", etc.).* Some – most of my projects have focused within the Kinne Brook subwatershed and slightly farther around the Middle Branch, which still has two remaining problem culverts that are a high priority. And while some natural in-stream woody habitat has recruited in Kinne Brook, it does not meet the standard number of pieces of large wood per mile that would have the most beneficial impact on the watershed.

30. Have you noticed any changes in issues regarding water resources (e.g., changes in water quality, habitat, etc.)? In other subwatersheds surrounding the Middle Branch, there are a high number of connectivity issues -undersized culverts and deadbeat dams that serve no purpose other than to block fish passage and sediment transport. But those issues have been there for a long time. Recently there seems to be more erosion and sediment input (which can trigger nutrient issues and fish population declines) because of the more frequent intense storms that pass through the region.

31. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining the quality of water resources for the W&SWR? Frequent intense storms are likely to increase, as will periods of drought – the high flows will be higher and faster, and the low flows will be lower and longer. That kind of variability can seriously stress an aquatic system. Most subwatersheds throughout the W&SWR need greater in-stream habitat diversity, more riparian cover (from native plants and shrubs, not invasives like Japanese knotweed). Then

we need to make sure aquatic organisms can reach that habitat – remove the unused dams (many of which are on private property and out of the public eye) and improve road-stream crossings.

32. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts; recommended actions, etc.?

33. What do you believe may be the biggest obstacle to addressing issues regarding water resources for the Westfield River? On the issue of connectivity, the issue is almost always money. Replacing culverts is expensive and towns throughout MA struggle to find the funding. For improving instream habitat, public buy-in is often the issue. People have been taught for decades that they need to take wood and rocks out of the streams, not leave them there or even add to them. But TU is working on an outreach model that will hopefully start to solve that problem.

34. What additional actions would you like to see taken to address any current issues regarding water resources or to further protect the W&SWR? Increasing riparian buffers and stream shading; working with local DPWs to improve road drainage and runoff – particularly from gravel roads.

35. Do you have any other information related to water resources that would be useful in developing this Stewardship Plan? There are several great models out there to look at fisheries vulnerability and resilience, including TU's Conservation Portfolio (https://www.tu.org/science/conservation-planning-and-assessment/conservation-portfolio/). UMass and USGS have also been working on excellent models for both water temperature/fish resilience and persistence, as well as models for prioritizing culvert replacements based on both ecological benefits and (human) community safety – but I think both are only based in the Deerfield watershed at the moment… It might be worth pressing that the W&SWR should be the next watershed to receive so much attention.

Pre-Workshop Survey Questions: Cultural/Recreational Resources Working Group

26. What is your name? Jeff Penn

27. What is the name of your community/company/organization/institution/agency? How long have you been involved with them? Highlands Footpath, Inc (2012), Huntington Historic Commission (> 5 years) – myriad other involvements

28. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date? Huntington Rep; activist, promoter (brought Huntington in during territory enlargement c.1998) – involvement last two years limited to partnership projects

29. What do you believe is unique or special about the cultural, historic, and recreational resources of the W&SWR and its watershed? Rare and threatened wilderness area within Megalopolis, Viable wildlife habitat and passage requiring intensive monitoring and protection, many remarkable historical monuments out in nature (native, settler and early American) being damaged by informal recreational hooligans (ATV's, Ancient Stonework manipulation); extraordinary views and habitat under threat of overdevelopment including ill-placed Clean Energy infrastructure; remarkably intact early settlements and historic structures under threat of alteration by poor planning and lack of historical resource protections. Intact landscape for future viable water and food source.

30. What do you believe are some of the key issues regarding cultural resources and land uses for the W&SWR? *Issues could include topics such as recreational access, cultural landscape/historic character, scenic resources, citizen education/engagement, etc.* Recreation Access is hampered by myriad State and Private agencies managing properties with individual mandates rather than comprehensive planning to protect the identified cross-border resources. Biomap II should be our planning basis, clearly identifying wildlife passage and habitat to be protected. Recreation infrastructure and access should be managed more like Western USA BLM management policies. We live in a regenerated landscape with a large percentage of invasive and non-native species and much historical landscape manipulation from Stone Walls severing forest floor continuity to Roadways doing the same to Dams severing water passage. However, these structures are also historical monuments worthy of protections. That said, extraordinary attention has been levied on minor locations or trail segments while simultaneous destruction of entire ridgelines occurs nearby. Trail and landscape damage needs to be managed by Education of proper practices, partnership and engagement with locals rather than labeling them criminal. The Managers are Employees of the Citizens managing Our Resources. If we all partnered, then actual protection of resources, pathways and structures might be possible. We need a larger region of protections and sensitive planning, perhaps all of Western 413; Perhaps a National Heritage Area.

31. Are you aware of key areas of the watershed that are significant in regards to cultural, historic, and recreational resources as listed above? *Be as specific as possible (e.g., location of scenic vistas at risk of development, historic/cultural sites requiring protection, recreational access areas needing improvement, opportunities to improve citizen education/engagement with signage, etc.).* this

question is not answerable here as there are multitudes of resources in each town, most but not all of which are already identified in management plans and Historical Commission and Society records, but not comprehensively shared between planners. I could list dozens of such locations.

32. Have you noticed any changes in issues regarding cultural/historic/recreational resources? Yes – incremental loss of historic buildings is eroding scenic and historic character of sites and villages, loss or alteration of historical features is also removing Cultural Continuity, overbuilding and loss of Habitat and Wildlife Passage is pushing wildlife into inhabited landscapes. Many old barns are decrepit; many old houses get replaced because people do not see the value of maintaining them or simply want easy, new and clean. Simultaneously we are losing old meadows, rural road frontages and intact forests to Ill-conceived development. Even though waterways are protected resources, logging operations, road and building developments are altering streamside conditions including altering solar gain, streamside bank conditions and runoff quality.

33. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining cultural/historic/recreational resources for the W&SWR? Lack of regional protections, lack of clarity regarding smart development, lack of understanding of consequences of Clean Energy infrastructure, American selfishness and greed.

34. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts; recommended actions, etc.? Highlands Footpath Management Plan; Biomap II; Mass Historical Most Endangered Places; myriad already produced dusty management plans sitting on bookshelves in libraries and town halls.

35. What do you believe may be the biggest obstacle to addressing issues regarding cultural/historic/recreational resources for the W&SWR? Commonwealth bureaucracy and American selfishness and greed.

36. What additional actions would you like to see taken to address any current issues regarding cultural/historic/recreational resources or to further protect the W&SWR? Increased partnerships with Cultural Stewardship agencies like Mass. Hist. Comm., Pioneer Valley History Network, all local Historical Commissions and Societies; local proven institutions such as Historic Deerfield, UMass, etc.

37. Do you have any other information related to these issues that would be useful in developing this Stewardship Plan? Not all is doom and gloom; I really appreciate the Westfield Wild and Scenic Committee's commitment to good planning and resource protection and your vivid, remarkable successes in the Communities.

Pre-Workshop Survey Questions: Water Resources Working Group

36. What is your name?

John Burns - Sorry, a bit busy to rewrite all the answers but glad to be involved. See answers throughout.

37. What is the name of your community/company/organization/institution/agency? How long have you been involved with them?

Burns Environmental Forever! 5 years

38. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date?

Since beginning

39. What do you believe is unique or special about the Westfield River's water resources?

Headwaters particularly pristine and protected

40. What do you believe are some of the key issues regarding water resources for the W&SWR? *Issues could include topics such as water quality, aquatic ecology, aquatic habitat connectivity, stream channel integrity, aquatic invasive species, etc.*

Plant invasives. Habitat and water degradation at lower parts. Dams/connectivity.

41. Are you aware of key areas of the watershed that are significant in regards to water resources? *Be as specific as possible (e.g., location of culvert needing improvement for fish passage, area of river bank erosion, water quality "hot spot", etc.).*

Yes, but too many to list

42. Have you noticed any changes in issues regarding water resources (e.g., changes in water quality, habitat, etc.)?

Nothing significant as far as major changes in past 30 years.

43. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining the quality of water resources for the W&SWR?

Habitat fragmentation. Eutrophication. Overheating. Invasives. Shoreline development/degradation

44. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts; recommended actions, etc.?

See WISP.

45. What do you believe may be the biggest obstacle to addressing issues regarding water resources for the Westfield River?

Politicians and eastern Mass folks unaware of the watershed driving policy when they haven't studied the area – Limiting Forestry on State lands, Biomass plants, ATV use on public and private lands, lack of open space planning in hill towns.

46. What additional actions would you like to see taken to address any current issues regarding water resources or to further protect the W&SWR?

Don't even think about biomass plants. Remove dams

47. Do you have any other information related to water resources that would be useful in developing this Stewardship Plan?

Pre-Workshop Survey Questions: Terrestrial Resources Working Group

24. What is your name?

25. What is the name of your community/company/organization/institution/agency? How long have you been involved with them?

26. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date?

27. What do you believe is unique or special about the terrestrial resources of the W&SWR watershed??

28. What do you believe are some of the key issues regarding terrestrial resources for the Westfield River? *Issues could include topics such as terrestrial habitat, forest integrity and connectivity (e.g., wildlife corridors), conservation areas, native communities, etc.*

29. Are you aware of key areas of the watershed that are significant in regards to terrestrial resources? *Be as specific as possible (e.g., location of potential improvement in forested buffer, high priority parcel for land conservation, important bird habitat areas, etc.).*

30. Have you noticed any changes in issues regarding terrestrial resources (e.g., development trends reducing forested buffer, increase in invasive species, shifts in wildlife populations?)

    Invasives, ATVs, housing development

31. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining the quality of terrestrial resources for the W&SWR?

32. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts, recommended actions, etc.?

33. What do you believe may be the biggest obstacle to addressing issues regarding terrestrial resources for the Westfield River?

34. What additional actions would you like to see taken to address any current issues regarding terrestrial resources or to further protect the W&SWR?

35. Do you have any other information related to terrestrial resources that would be useful in developing this Stewardship Plan?

Pre-Workshop Survey Questions: Cultural/Recreational Resources Working Group

38. What is your name?

39. What is the name of your community/company/organization/institution/agency? How long have you been involved with them?

40. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date?

41. What do you believe is unique or special about the cultural, historic, and recreational resources of the W&SWR and its watershed?

There are more world-class artists and writers, etc. that live here than most anyone realizes.

42. What do you believe are some of the key issues regarding cultural resources and land uses for the W&SWR? *Issues could include topics such as recreational access, cultural landscape/historic character, scenic resources, citizen education/engagement, etc.*

Hard to make enough money to live here and attend or take advantage of some of the cultural events so many people poorly educated about these resources and opportunities. This can influence decision making at the town level and overall quality of life. People also have a hard time "doing the right thing" with respect to land management because they can't afford to – Trash/junk in the yard, property management, invasives mgmt. Thus we get dumping of trash/junk on various back roads.

43. Are you aware of key areas of the watershed that are significant in regards to cultural, historic, and recreational resources as listed above? *Be as specific as possible (e.g., location of scenic vistas at risk of development, historic/cultural sites requiring protection, recreational access areas needing improvement, opportunities to improve citizen education/engagement with signage, etc.).*

44. Have you noticed any changes in issues regarding cultural/historic/recreational resources?

45. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining cultural/historic/recreational resources for the W&SWR?

46. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts; recommended actions, etc.?

47. What do you believe may be the biggest obstacle to addressing issues regarding cultural/historic/recreational resources for the W&SWR?

48. What additional actions would you like to see taken to address any current issues regarding cultural/historic/recreational resources or to further protect the W&SWR?

Pre-Workshop Survey Questions: Water Resources Working Group

48. What is your name? Meredyth Babcock

49. What is the name of your community/company/organization/institution/agency? How long have you been involved with them?

    Wild & Scenic Westfield River Volunteer and Project coordinator 2009 - present

50. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date?

    I have been developing programs and outreach. Carrying out trainings, workdays and programs for the past eleven years. I am a puppeteer by trade. Before joining the committee, as their volunteer coordinator, I was working with the Westfield River Watershed Association, writing and performing puppet shows to educate schools & communities about the importance and fragile nature of our water resources.

51. What do you believe is unique or special about the Westfield River's water resources?

    I am honored to have walked all 78 designated miles, as well as an additional 38 miles of tributaries, with interns and community members conducting visual surveys and capturing photos (uploaded to flickr) for the Committee. I have a deep appreciation for and am in awe of what remains wild in these Hilltown's. It also scares me as so few of the communities have done the town planning needed to establish methods that preserve the sensitive irreplaceable areas that have supported such a rich and diverse ecosystem. From what I understand the committee would like to propose an expansion of the designation (perhaps watershed wide) if and when the funding to support Wild & Scenic Rivers is assigned based on two assessments. First having a Wild & Scenic designation regardless of the miles designates (which is how a portion is assigned) and secondly (supporting the ability to expand the committees services) on the number of designated miles. If this was done the committee would be much more likely to seek and expansion.

    The East Branch from Cummington, where the swift river enters, to the Knightville Dam Basin represents a long stretch of intact riparian areas, whose protections should be expanded upon and ideally have paid staff to patrol, educate and oversee the use and abuse of this area.

    The state should see this area as unique and worthy of protection not only on paper but with paid staff (preferable locals who are eager to protect the area and work close to home).

52. What do you believe are some of the key issues regarding water resources for the W&SWR? *Issues could include topics such as water quality, aquatic ecology, aquatic habitat connectivity, stream channel integrity, aquatic invasive species, etc.*

    I would love to see a watershed wide assessment of high priority parcels that still have integrity identified and protected through collaboration and education. Many organizations are working on this goal but a coordinated map with water quality at the center would be valuable.

I think the area we serve is vulnerable to a changing climate by being wild, having relatively inexpensive land and clean water. The towns are ill prepared for expansion as folks seek refuge from the city bringing their urban congested aesthetic and understanding (or lack thereof) the value of habitat and in tack contiguous wild lands. Perhaps a "Keeping it Wild & Scenic" Bylaw that could include steep slope, cluster housing and/or low impact development only or limited development. If the state recognized this area as valuable for the state to kep wild perhaps that would help offset the cost to the towns. Pay them to re-assess the roads culverts pay them to remove redundant roads, pay community members with incentives to replace lawn with native pollinator loving plants. Incentivize the removal of invasive plants.

Legislative collaboration (Rivers Alliance representative seek representation from the hill towns – I would be interested in and willing to serve but can't afford to as a part time employee)

I would like to see the committee work to adjust the states recognition of and value placed on wild healthy protected land. The return for small towns willing to protect land is so small it discourages them from doing so. In fact, it pits the environmental organization against community members and select boards who are just trying to pay the towns bills.

I would love to see an adjustment to the amount paid to towns for road maintenances or miles of roads serviced. If an old road is "discontinued" or turned into a trail there should be a financial incentive instead of a financial penalty. This would allow these unique wild towns to protect while offering an escape for recreation.

Looking at the long-range value of tourism as opposed to allowing single family home construction segmenting vital wildlife corridors and introducing more segmented parcels. Perhaps huge swaths of the Hilltown's should be persevered and protected for wildlife and water instead of exploited by humans.

Invasive species particularly plants that thrive along river corridors (Knotweed, Purple loosestrife) have degraded large swaths of the river corridor. Funding, consistency and long-range collaborative planning is essential. Starting at the top of a watershed looking at crossings that are on headwater streams that are contributing to the spread should receive special consideration and upland highway department be required to demonstrate an advanced understanding of those organisms. Extra funding for this education and implementation acknowledging the true coast of spreading these organisms downstream.

53. Are you aware of key areas of the watershed that are significant in regards to water resources? *Be as specific as possible (e.g., location of culvert needing improvement for fish passage, area of river bank erosion, water quality "hot spot", etc.).*

That the state is considering and moving forward with reinstalling a dam at Windsor Jams State forest, instead of creating a park where the value of water as a precious resource is highlighted is very discouraging. Teaching folks to play in water as an explorer and guest instead of a controller and ruler should be paramount. The next generation could come to the river not to "swim and sun bath but to count newt and frogs, look for macro invertebrates. Why couldn't Windsor Jams be designated a Wild & Scenic State park where there are naturalists and interns on sight to help educate and inspire the next generation. The camping areas should be moved off the river corridor and an explanation of why this is needed front and center.

Opening parks to ATV and ORV's without a pre and post assessment of biodiversity is regrettable. I think we need a designated Wild & Scenic wildlife officer as so many folks abuse the wild lands with unintended long term impacts to the resource area with little or no penalty.

54. Have you noticed any changes in issues regarding water resources (e.g., changes in water quality, habitat, etc.)?

    I have noticed an enormous increase in knotweed and during this time of covid use at access point without oversite resulting in overuse, fecal matter and garbage'

    This area would benefit from Public facilities in keeping with the resource value. Compositing toilets managed by a local company supported by the state in recognition of that they offer as far as air and water purification would be ideal.

55. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining the quality of water resources for the W&SWR?

    Consistent well written Wild & Scenic Bylaws, Education and support for Highway departments who impact waterways, Outreach and education fiscal value placed on protected land and maintaining water quality.

    Protecting land seen not for human access but for habitat preservation.

56. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts; recommended actions, etc.?

    All of the end of the year reports shows the work we have dome over the past 10 years

57. What do you believe may be the biggest obstacle to addressing issues regarding water resources for the Westfield River?

    Funding and human beings thinking they are at the center instead of one small disruptive part. Funding knowing the true value of an intact ecology and the benefits it gives.

58. What additional actions would you like to see taken to address any current issues regarding water resources or to further protect the W&SWR?

    I would love to see a watershed wide map of redundancies done. Are there bridges culverts roadways that could be removed to open corridors, reduce replacement costs and open better flood storage access. This could only be done with support at the state level not to punish towns for reducing their miles of roads but give them incentives to do so instead!!

59. Do you have any other information related to water resources that would be useful in developing this Stewardship Plan?

    Having a paid knowledgeable manager/facilitator/administrator is vital. Having a unique "State Administered River" receive state support and funding is absolutely necessary. The amount that

was accomplished when the committee had Carrie Banks managing our efforts was a thousand times greater than what we can accomplish without an administrator. This work needs coordination and someone dedicated and compensated for their knowledge and skill.

Pre-Workshop Survey Questions: Terrestrial Resources Working Group

36. What is your name? Meredyth Babcock

Wild & Scenic Westfield River Volunteer and Project coordinator 2009 - present

60. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date?

I have been developing programs and outreach. Carrying out trainings, workdays and programs for the past eleven years. I am a puppeteer by trade. Before joining the committee, as their volunteer coordinator, I was working with the Westfield River Watershed Association, writing and performing puppet shows to educate schools & communities about the importance and fragile nature of our water resources.

37. What do you believe is unique or special about the terrestrial resources of the W&SWR watershed?

The ten towns we serve still have segments of contiguous wild lands creating important wildlife corridors unfortunately as large pieces sell even with CR the new landowners do not always honor the laws and protect the habitat. ATV trails Criss cross the Knightville Dam Basin and with little policing or oversite I fear this will continue.

38. What do you believe are some of the key issues regarding terrestrial resources for the Westfield River? *Issues could include topics such as terrestrial habitat, forest integrity and connectivity (e.g., wildlife corridors), conservation areas, native communities, etc.*

Invasive plants are another threat that needs broad and well-funded management. I hope that some of the MVP projects begin to address smaller infestations and train highway Dept to clean machinery and explore new methods of control.

39. Are you aware of key areas of the watershed that are significant in regards to terrestrial resources? *Be as specific as possible (e.g., location of potential improvement in forested buffer, high priority parcel for land conservation, important bird habitat areas, etc.).*

There are two fields just about the Knightville Dam Basin that were filled with wildflowers and are now a mass of invasive species. I would love to see the committee supported by the Army Corp propose a restoration plan in that area. Include UMASS or Westfield State.

I believe the state needs to make education in their parks a priority. The creation of young stewards through camping experience where families give back through volunteerism, perhaps gain a unique experience while they are camping.

40. Have you noticed any changes in issues regarding terrestrial resources (e.g., development trends reducing forested buffer, increase in invasive species, shifts in wildlife populations?)

I have watched the two fields and the Knightville Dam Basin fill with invasive plants. I have watched as Knotweed was spread by maintenance crews along the road to the headwaters of the middle Branch and along the East Branch in Windsor. I have also seen many community members learn to

certify vernal pools and identify invading plants. I have seen many folks planting pollinator gardens and cherishing the return of the monarchs. In the coming years I want to continue to share the benefits of offering a garden as a potluck instead of thinking of it as a perfect manicured lawn with dabs of color. I wish the state and towns could incentivize the planning oif native plants perhaps an exchange or buy back of the most egregious ones.

I want to help folks fall in love with and help the incredible Beavers who slow the water down and create brilliant diversity wherever the set-up home. Unlike humans their yards or ponds offer untold treasures to a million organisms.

41. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining the quality of terrestrial resources for the W&SWR?

    Expansion of single-family homes who's priority is lawn, removing the buffers and segmenting habitat with roads and recreation.

42. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts, recommended actions, etc.?

43. What do you believe may be the biggest obstacle to addressing issues regarding terrestrial resources for the Westfield River? Funding and ignorance

44. What additional actions would you like to see taken to address any current issues regarding terrestrial resources or to further protect the W&SWR?

    I would love the committee to highlight some of the amazing folks who have elected to protect their land even if it reduced their ability to subdivide and or sell their property.

45. Do you have any other information related to terrestrial resources that would be useful in developing this Stewardship Plan?

    Funding for Graduate students to conduct research and offer workshops would be an amazing win win.

Pre-Workshop Survey Questions: Cultural/Recreational Resources Working Group

49. What is your name? Meredyth Babcock

50. What is the name of your community/company/organization/institution/agency? How long have you been involved with them?

    Puppeteer wrote and toured The Watershed Waltz 2011 – 2014 (available on DVD through the WRWA website) and the Wild & Scenic Westfield River Volunteer and Project coordinator 2009 - present

51. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date?

    Started as a volunteer with my three homeschool children adopting a segment in Becket MA.
    Wild & Scenic Westfield River Volunteer and Project coordinator 2009 - present

52. What do you believe is unique or special about the cultural, historic, and recreational resources of the W&SWR and its watershed?

    I think it is important to continue making the community proud of their history and invested in the sharing of it. The after-school program I ran at the Becket /Washington school for seven years certainly increased the family's knowledge and appreciation of how important the river has been to the town's history.

53. What do you believe are some of the key issues regarding cultural resources and land uses for the W&SWR? *Issues could include topics such as recreational access, cultural landscape/historic character, scenic resources, citizen education/engagement, etc.*

    The idea that land and water is here for humans to use and access instead of in need of our protection and admiration.

    I would love to see tiny houses built to house recent graduates or Graduate Students in exchange for a certain amount of time offering workshops, walks and sharing information both cultural and environmental. These could be stationed around the watershed on public land. It would serve multiple purposes.

    1- Give Graduates a place to live in exchange for their passion and knowledge
    2- Inform the public of these sensitive areas and how best to interact with them. Be eyes on the ground. Have places you don't go because you know it is sensitive. Learn to leave wildlife alone even though you are curious.
    3- Encourage a deep reflection or research that can be added to our understanding of the miles of designated river.

    Could these tiny houses be then moved during the winter to the University to house a lucky Grad student who in exchange conducts some outreach or research on the Westfield River?

54. Are you aware of key areas of the watershed that are significant in regard to cultural, historic, and recreational resources as listed above? *Be as specific as possible (e.g., location of scenic vistas at risk of development, historic/cultural sites requiring protection, recreational access areas needing improvement, opportunities to improve citizen education/engagement with signage, etc.).*

I would love to help develop a campaign "Why we should stay out!!" helping folks understand that no matter how careful we are we tend to degrade habitat. It is not our fault, but we should know ourselves and recognize our ineptitude. The ability to laugh at ourselves and look back at the things we thought were right that resulted in catastrophe could be valuable. Highlighting the importance of admiring wild lands for their ability to manage and restore themselves.

55. Have you noticed any changes in issues regarding cultural/historic/recreational resources?

I would love to see an area that highlights and honors the native Americans that lived, worked and cared for this region without degrading it for generations. Indian Hollow is in name only…little if any information is shared or honored at this location which should be changed.

56. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining cultural/historic/recreational resources for the W&SWR?

The Keystone Arch Bridges could be such a draw and are of such historical significance, but their access is impeded by CSX's lack of participation in their restoration and preservation. Developing a relationship with CSX as a partner is very important. I believe this is only possible from someone in a position of political power. Could the state purchase the line from CSX to work towards their hope to have an EAST WEST corridor and while this planning is happening could a bike trail be added from Huntington to Pittsfield which would bring even more low impact recreational possibilities to the area.

Wildlife officers are needed to teach the respect for these wild areas.

57. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts; recommended actions, etc.?

58. What do you believe may be the biggest obstacle to addressing issues regarding cultural/historic/recreational resources for the W&SWR?

Humans perspective that the wilderness is here to serve them and not the other way around.

59. What additional actions would you like to see taken to address any current issues regarding cultural/historic/recreational resources or to further protect the W&SWR?

Repeated from page one: Having a paid knowledgeable manager/facilitator/administrator is vital. Having a unique "State Administered River" receive state support and funding is absolutely necessary. The amount that was accomplished when the committee had Carrie Banks managing our efforts was a thousand times greater than what we can accomplish without an administrator. This work needs coordination and someone dedicated and compensated for their knowledge and skill.

Pre-Workshop Survey Questions: Water Resources Working Group

61. What is your name? Sally Loomis
62. What is the name of your community/company/organization/institution/agency? How long have you been involved with them? Hilltown Land Trust – 9 years.
63. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date?

    As a project partner in events, as a volunteer, as the recilpient of Westfield W&S volunteer assistance, and as a grant recipient for land conservation projects.
64. What do you believe is unique or special about the Westfield River's water resources?

    Not sure this is unique, but the river connects our small town communities and is a wonderful teaching resource, recreational resource and ecological resource.

65. What do you believe are some of the key issues regarding water resources for the W&SWR? *Issues could include topics such as water quality, aquatic ecology, aquatic habitat connectivity, stream channel integrity, aquatic invasive species, etc.*
66. Are you aware of key areas of the watershed that are significant in regards to water resources? *Be as specific as possible (e.g., location of culvert needing improvement for fish passage, area of river bank erosion, water quality "hot spot", etc.).*

67. Have you noticed any changes in issues regarding water resources (e.g., changes in water quality, habitat, etc.)?
68. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining the quality of water resources for the W&SWR?

69. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts; recommended actions, etc.?
70. What do you believe may be the biggest obstacle to addressing issues regarding water resources for the Westfield River?

71. What additional actions would you like to see taken to address any current issues regarding water resources or to further protect the W&SWR?

72. Do you have any other information related to water resources that would be useful in developing this Stewardship Plan?

Pre-Workshop Survey Questions: Terrestrial Resources Working Group

46. What is your name? Sally Loomis
47. What is the name of your community/company/organization/institution/agency? How long have you been involved with them? Hilltown Land Trust – 9 years.
48. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date? As a project partner in events, as a volunteer, as the recipient of Westfield W&S volunteer assistance, and as a grant recipient for land conservation projects.
49. What do you believe is unique or special about the terrestrial resources of the W&SWR watershed? Abundance of undeveloped and protected land, remaining in-tact forests.
50. What do you believe are some of the key issues regarding terrestrial resources for the Westfield River? *Issues could include topics such as terrestrial habitat, forest integrity and connectivity (e.g., wildlife corridors), conservation areas, native communities, etc.*

Creating connected corridors of protected land for wildlife habitat and forest integrity.

51. Are you aware of key areas of the watershed that are significant in regards to terrestrial resources? *Be as specific as possible (e.g., location of potential improvement in forested buffer, high priority parcel for land conservation, important bird habitat areas, etc.).*

52. Have you noticed any changes in issues regarding terrestrial resources (e.g., development trends reducing forested buffer, increase in invasive species, shifts in wildlife populations?)

    Invasive species

53. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining the quality of terrestrial resources for the W&SWR?

    Enabling natural resources to withstand impacts of climate change.

54. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts, recommended actions, etc.?

55. What do you believe may be the biggest obstacle to addressing issues regarding terrestrial resources for the Westfield River?

    Funding for land conservation and stewardship and resistance of town governments to additional conservation efforts.

56. What additional actions would you like to see taken to address any current issues regarding terrestrial resources or to further protect the W&SWR?

57. Do you have any other information related to terrestrial resources that would be useful in developing this Stewardship Plan?

Pre-Workshop Survey Questions: Cultural/Recreational Resources Working Group

60. What is your name? Sally Loomis

61. What is the name of your community/company/organization/institution/agency? How long have you been involved with them? Hilltown Land Trust, 9 years

62. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date?

63. What do you believe is unique or special about the cultural, historic, and recreational resources of the W&SWR and its watershed?

64. What do you believe are some of the key issues regarding cultural resources and land uses for the W&SWR? *Issues could include topics such as recreational access, cultural landscape/historic character, scenic resources, citizen education/engagement, etc.*

65. Are you aware of key areas of the watershed that are significant in regards to cultural, historic, and recreational resources as listed above? *Be as specific as possible (e.g., location of scenic vistas at risk of development, historic/cultural sites requiring protection, recreational access areas needing improvement, opportunities to improve citizen education/engagement with signage, etc.).*

66. Have you noticed any changes in issues regarding cultural/historic/recreational resources?

67. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining cultural/historic/recreational resources for the W&SWR?

68. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts; recommended actions, etc.?

69. What do you believe may be the biggest obstacle to addressing issues regarding cultural/historic/recreational resources for the W&SWR?

70. What additional actions would you like to see taken to address any current issues regarding cultural/historic/recreational resources or to further protect the W&SWR?

71. Do you have any other information related to these issues that would be useful in developing this Stewardship Plan?

Pre-Workshop Survey Questions: Terrestrial Resources Working Group

58. What is your name? Westfield River Watershed Invasive Species Partnership (WISP)

59. What is the name of your community/company/organization/institution/agency? How long have you been involved with them?

    Westfield River Watershed Invasive Species Partnership

60. How have you been involved with the Wild and Scenic Westfield River (W&SWR) to date?

Yes, in a limited way. Helping out as a resource and professional expertise around invasive plant issues.

61. What do you believe is unique or special about the terrestrial resources of the W&SWR watershed??

    The watershed is relatively intact landscape with a scale of invasive plant infestation that is less than other watersheds in the state. It also has a large scale of protected land and priority habitat for rare species and priority natural communities. Distinctive bedrock formations provide for interesting habitats for species. The relatively small population contributes to development of the land in a way that allows for intact landscapes.

62. What do you believe are some of the key issues regarding terrestrial resources for the Westfield River? *Issues could include topics such as terrestrial habitat, forest integrity and connectivity (e.g., wildlife corridors), conservation areas, native communities, etc.*

    For WISP, invasive species prevention and management across the landscape especially in relationship to forestry and agricultural activities. In addition, forestry and agricultural activities that may impact high quality natural resources if BMPs are not followed. Also recreational activities (hikers, mt bikes, ORVs, etc.) that trample sensitive habitats, cause bank erosion, degradation of water quality and other negative impacts to natural habitats.

63. Are you aware of key areas of the watershed that are significant in regards to terrestrial resources? *Be as specific as possible (e.g., location of potential improvement in forested buffer, high priority parcel for land conservation, important bird habitat areas, etc.).*

    Forested riparian zones are very important to water quality, habitat quality, prevention of erosion and other aspects. Areas of the upper watershed that have few invasive species.

64. Have you noticed any changes in issues regarding terrestrial resources (e.g., development trends reducing forested buffer, increase in invasive species, shifts in wildlife populations?)

    Clearing of riparian zones for agriculture, vistas, etc.

65. What issues do you anticipate in the future? What are the key vulnerabilities with regard to protecting and maintaining the quality of terrestrial resources for the W&SWR?

    Need to balance resource use with resource protection. Carbon sequestration is an important issue, but needs to be balanced with forest products being produced in the most ecologically careful way – not just locally, but how our local actions impact global actions (e.g. no wood cut

locally ends up having wood cut perhaps in areas that don't have strong environmental regulations).
Climate change and its impacts: changing storm patterns; drought; invasive pests, plants and disease.

66. What information or existing reports from your community/company/organization/agency are available which describe these issues, their impacts, recommended actions, etc.?

    Losing Ground and State of the Birds from Mass Audubon. Invasive plant inventory information for the East Branch. Information on invasive species collected in EDDMaPs (Early Detection and Distribution Mapping System).

67. What do you believe may be the biggest obstacle to addressing issues regarding terrestrial resources for the Westfield River?

    Funding to support ecological restoration and protection.

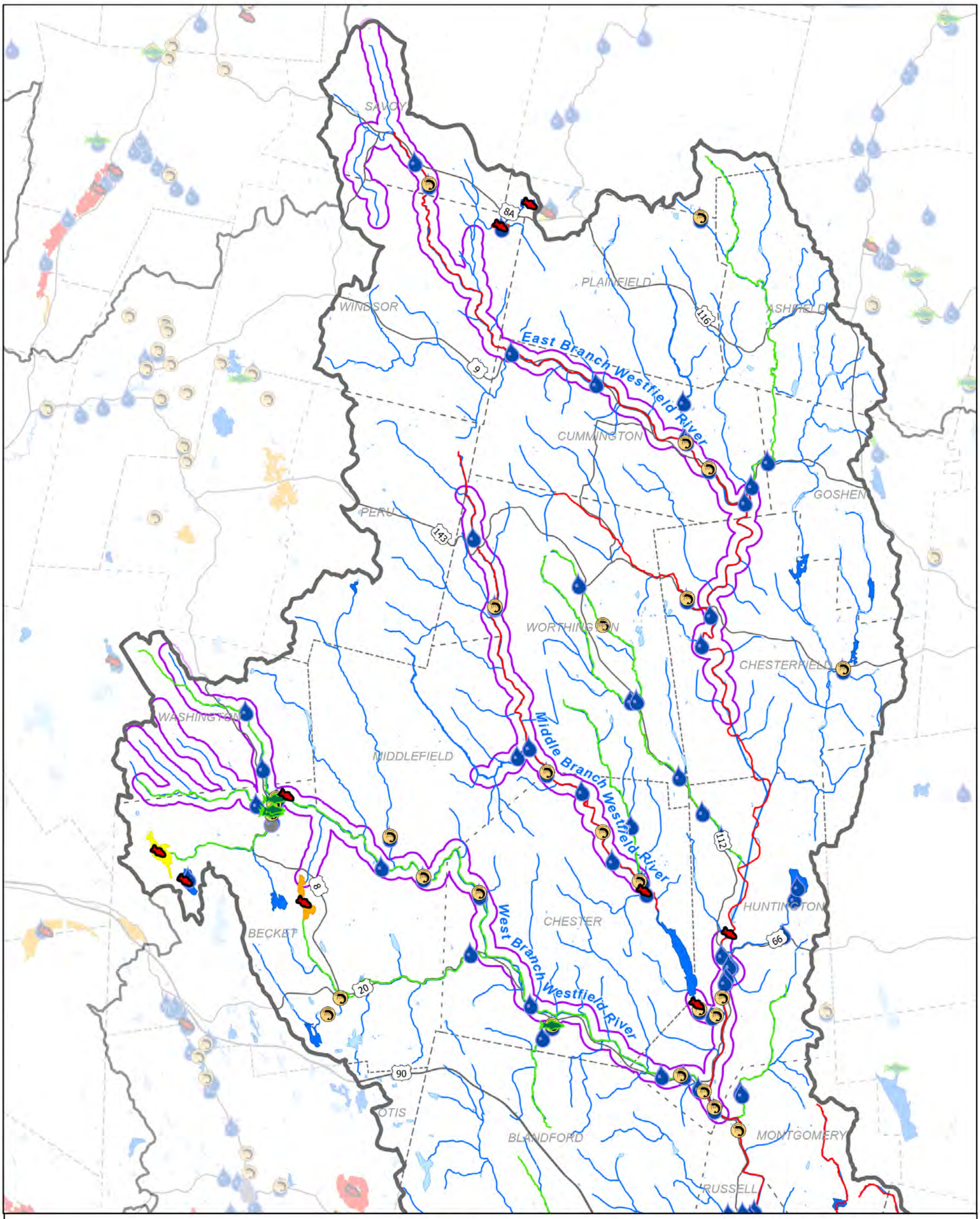
68. What additional actions would you like to see taken to address any current issues regarding terrestrial resources or to further protect the W&SWR?

    Education of landowners and users of the natural areas on the significance of the natural resources and regulatory process for actions that impact the resources (Wetlands Protection Act, Rivers Protection Act, MA Endangered Species Act, Best Management Practices). Communication and collaboration with landowners.

69. Do you have any other information related to terrestrial resources that would be useful in developing this Stewardship Plan?

    Information available from UMASS and other groups on forest stewardship, Estate Planning, land protection.

Appendix C: Workshop materials



Westfield Wild and Scenic River

MassDEP Monitoring Stations and 303(d)/305(b) Data

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Miles
0 1 2 3 4 5

Comprehensive Environmental Incorporated

Data Sources: MassGIS, NAACC, CEI

- Westfield River
- Wild and Scenic River Segments
- Other Rivers and Streams
- Lake, Pond, Reservoir
- Major Roads
- Watershed Boundary
- Town Boundaries

MassDEP Monitoring Stations

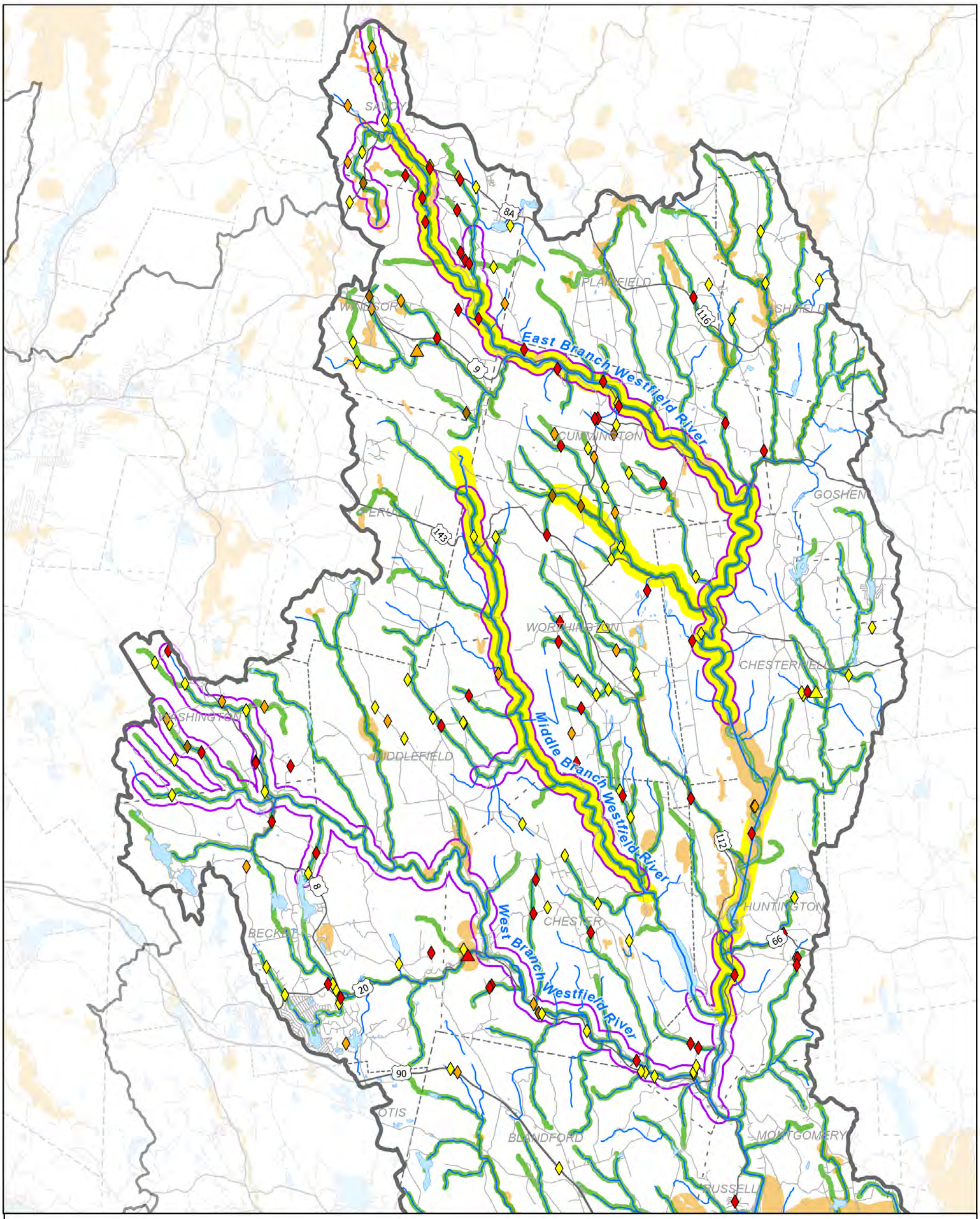
- Fish Toxics Stations
- Fish Population Stations
- Benthic Macroinvertebrate Stations
- Surface Water
- Discharge

305(b)/303(d) Data

Streams and Waterbodies

- 2 - Attaining some uses; other uses not assessed
- 3 - No uses assessed
- 4A -Impaired - TMDL is completed
- 4C - Impairment not caused by a pollutant
- 5 - Impaired - TMDL required

11/3/2020



Westfield Wild and Scenic River

Stream Barriers, Coldwater Fisheries and NHESP Priority and Estimated Habitats

N
W E
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0 1 2 3 4 5

Comprehensive Environmental Incorporated

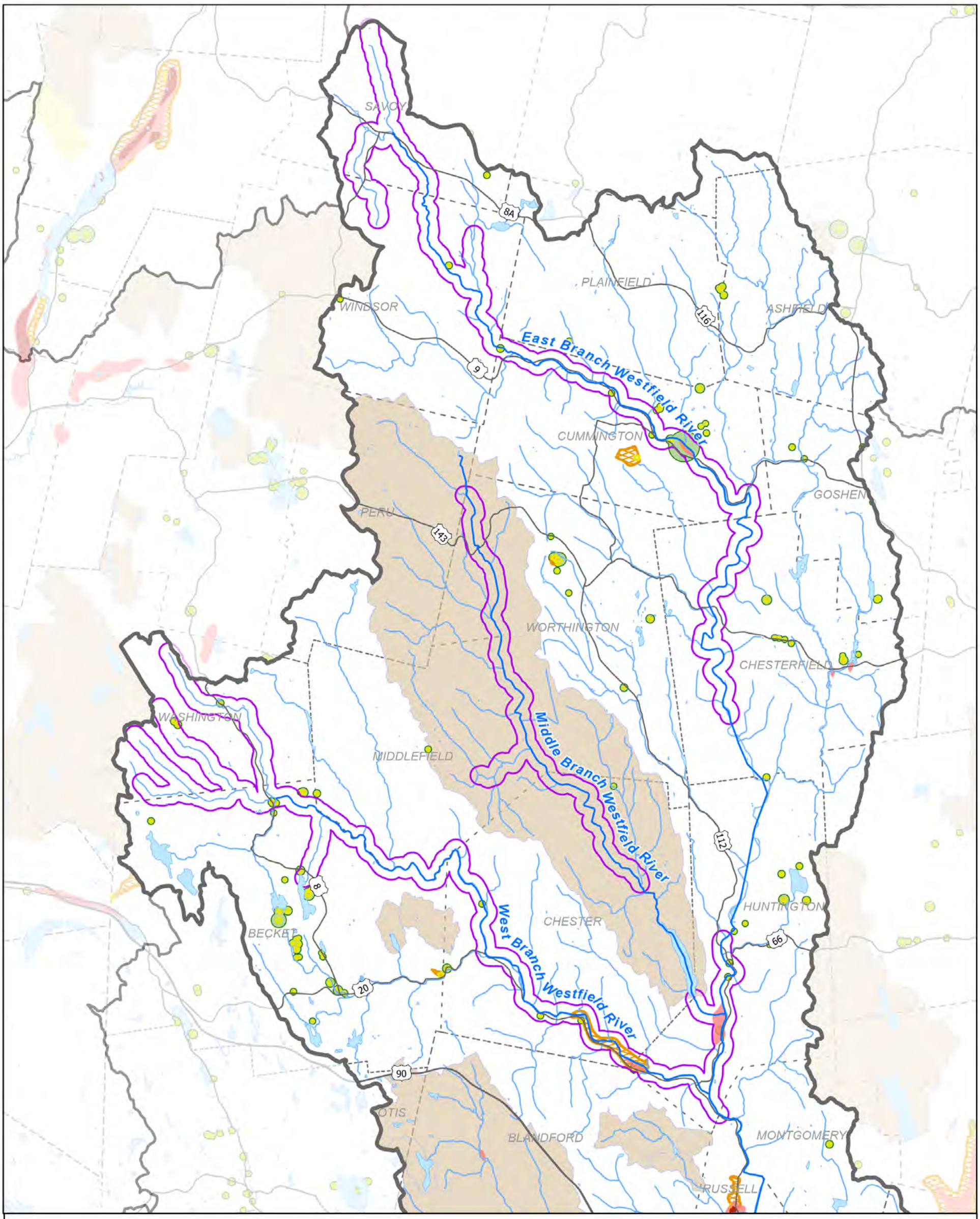
Data Sources: MassGIS, NAACC, CEI

- Westfield River
- Wild and Scenic River Segments
- Temperature-Impaired River Segments
- Other Rivers and Streams
- Lake, Pond, Reservoir
- Major Roads
- Minor Roads
- Watershed Boundary
- Town Boundaries
- MA DFW Coldwater Fisheries Resources
- NHESP Priority or Estimated Habitats of Rare Species

Stream Barriers

- Bridge, Minor barrier
- Bridge, Moderate barrier
- Bridge, Severe barrier
- Culvert(s), Minor barrier
- Culvert(s), Moderate barrier
- Culvert(s), Significant barrier
- Culvert(s), Severe barrier

10/30/2020



Westfield Wild and Scenic River

Aquifers, Outstanding Resource Waters and Wellhead Protection Zones

Miles

0 1 2 3 4 5

Comprehensive Environmental Incorporated

Data Sources: MassGIS, NAACC, CEI

- Westfield River
- Wild and Scenic River Segments
- Other Rivers and Streams
- Lake, Pond, Reservoir
- Major Roads
- Watershed Boundary
- Town Boundaries
- DEP Approved Zone I
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- Interim Wellhead Protection Area

Aquifers

- High Yield
- Medium Yield

Outstanding Resource Waters

- Public Water Supply Watershed
- Retired Public Water Supply

10/30/2020

Wild & Scenic Westfield River Stewardship Matrix

Adapted from www.CommunityResilienceBuilding.org

Water Resources Working Group

Water Quality	Location	Ownership	Vulnerability or Strength	Proposed Actions	Priority	Time
Aquatic Ecology	**Location**	**Ownership**	**Vulnerability or Strength**	**Proposed Actions**		
Stream Channel Integrity/Connectivity	**Location**	**Ownership**	**Vulnerability or Strength**	**Proposed Actions**		
Other	**Location**	**Ownership**	**Vulnerability or Strength**	**Proposed Actions**		

Stewardship Plan for the
WILD & SCENIC WESTFIELD RIVER

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Workshop 1:

Water Resources Working Group

November 5, 2020

Introductions

In case of Zoom problems:
edifranco@ceiengineers.com or 603-343-6311

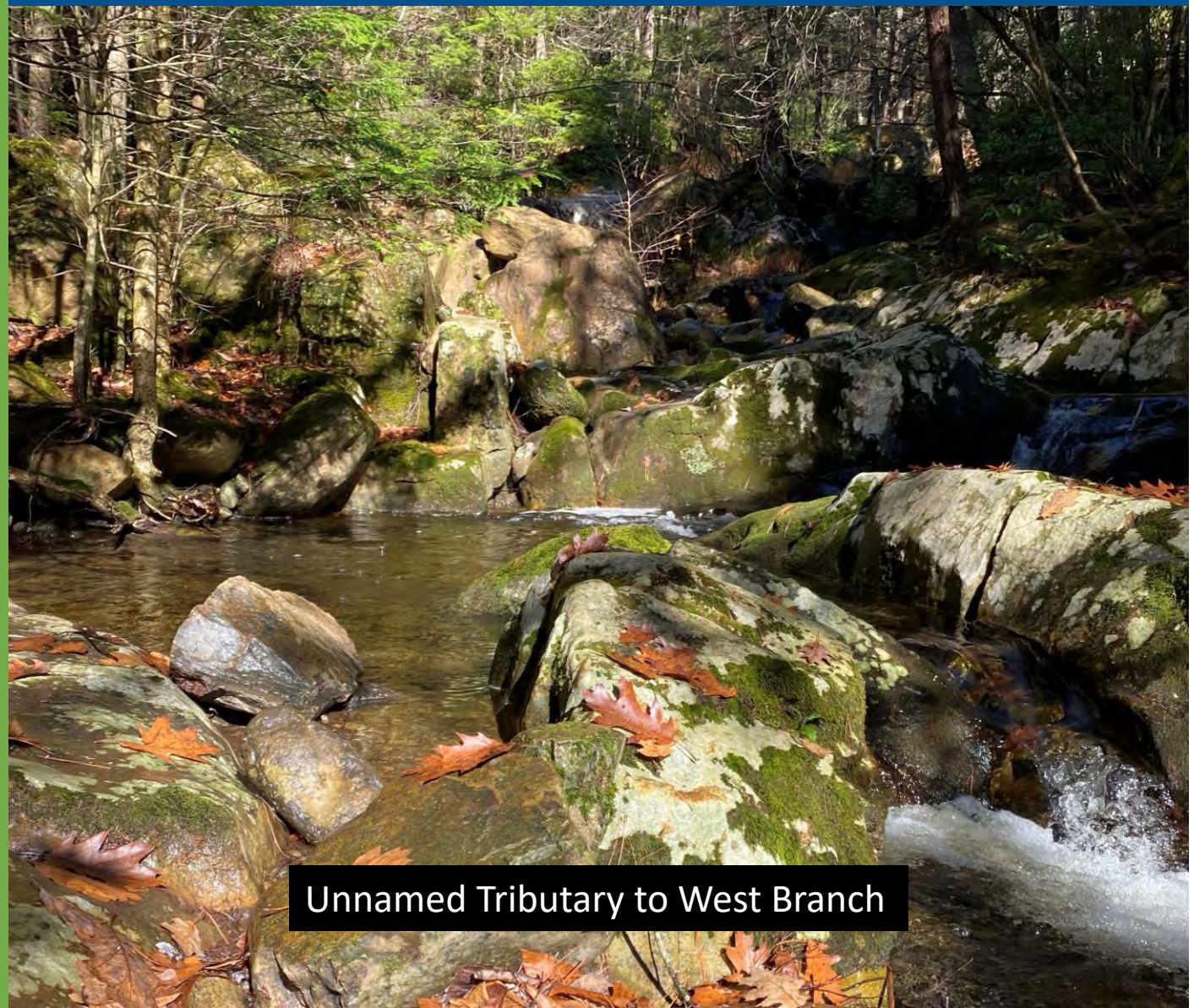
WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Stewardship Plan Goals

- ***Provide a vision and action strategy*** *for management and protection of the Westfield River watershed.*
- ***Protect and enhance*** *the water quality, ecology, historic resources, scenic qualities, and cultural resources of the Westfield River watershed.*

WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Workshop Topics/Schedule



Unnamed Tributary to West Branch

1. Water Resources Working Group

Thursday, November 5th, 10am -12pm

Water quality, aquatic ecology, aquatic connectivity, channel integrity, aquatic invasive species, etc.

2. Terrestrial Resources Working Group

Thursday, November 12th, 10am -12pm

Terrestrial habitat, forest integrity and connectivity, conservation areas, native communities, etc.

3. Cultural/Land Uses Working Group

Tuesday, November 17th, 7-9 pm

Recreation, cultural landscape/historic character, scenic resources, citizen education/engagement, etc.

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Reference Maps

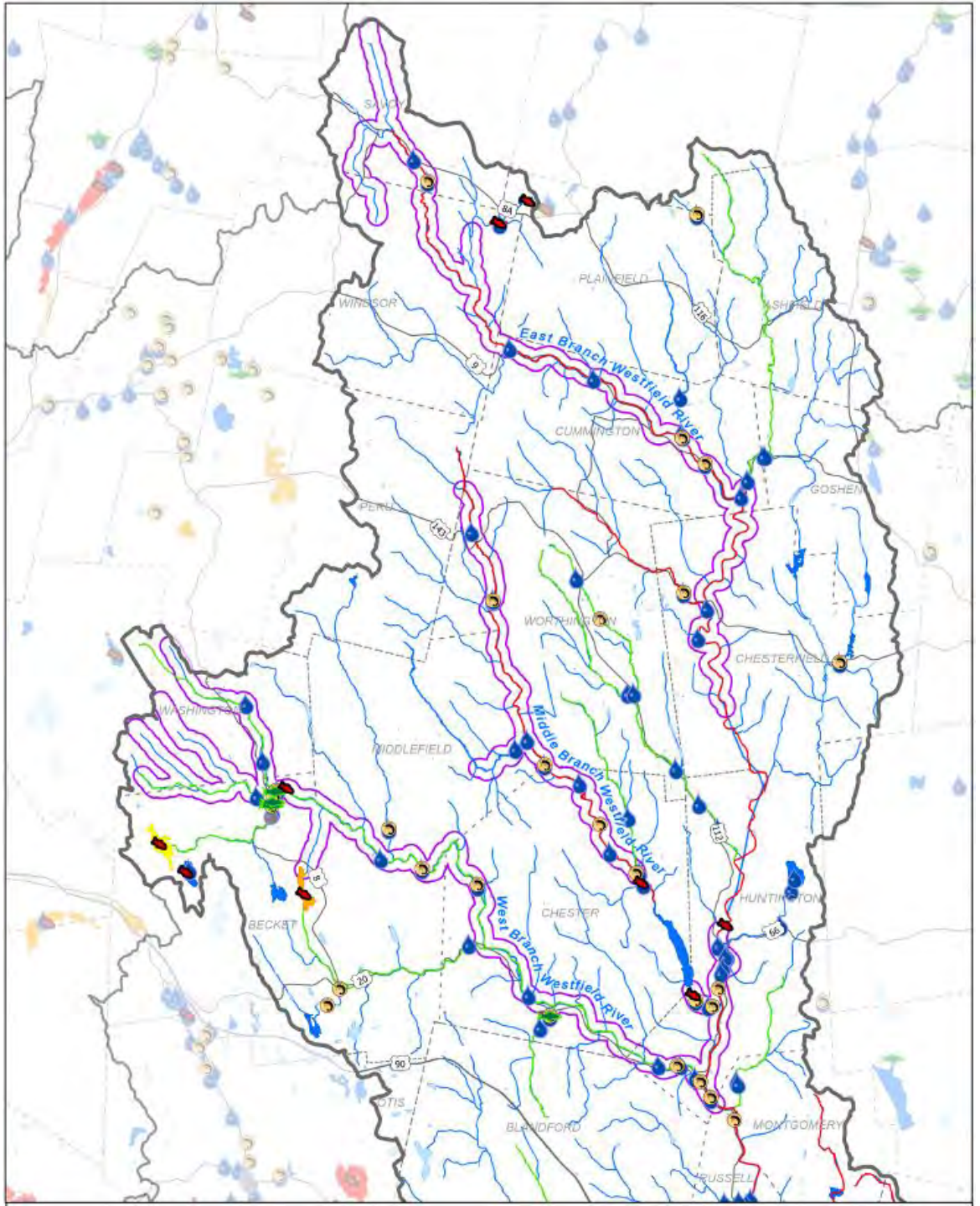
West Branch-Westfield River

WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Westfield Wild and Scenic River

MassDEP Monitoring Stations and 303(d)/305(b) Data

Comprehensive Environmental Incorporated



305(b)/303(d) Data

Streams and Waterbodies

- 2 - Attaining some uses; other uses not assessed
- 3 - No uses assessed
- 4A -Impaired - TMDL is completed
- 4C - Impairment not caused by a pollutant
- 5 - Impaired - TMDL required

- Westfield River
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- Town Boundaries

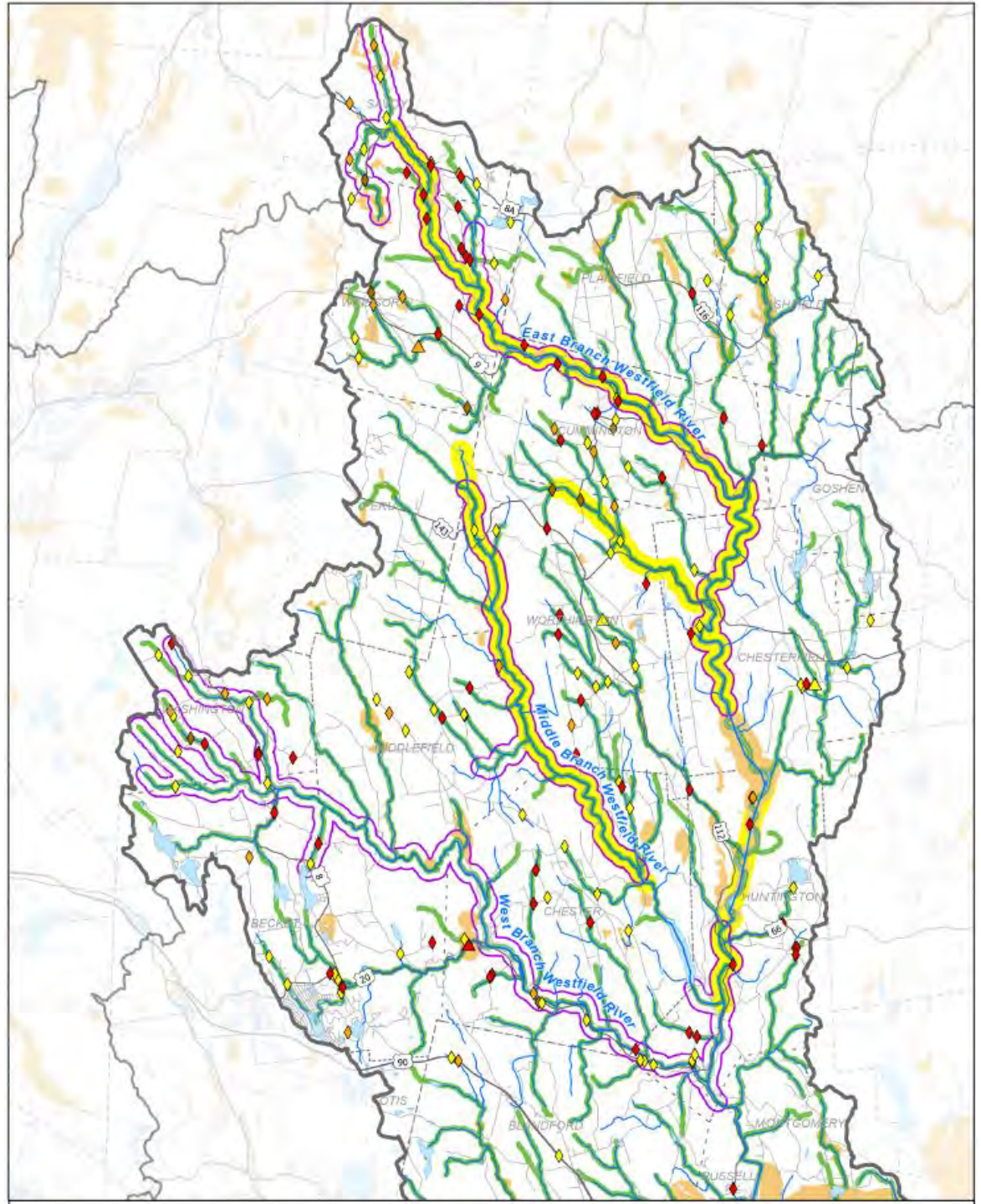
MassDEP Monitoring Stations

- Fish Toxics Stations
- Fish Population Stations
- Benthic Macroinvertebrate Stations
- Surface Water
- Discharge

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Westfield Wild and Scenic River

Stream Barriers, Coldwater Fisheries and NHESP Priority and Estimated Habitats



Miles
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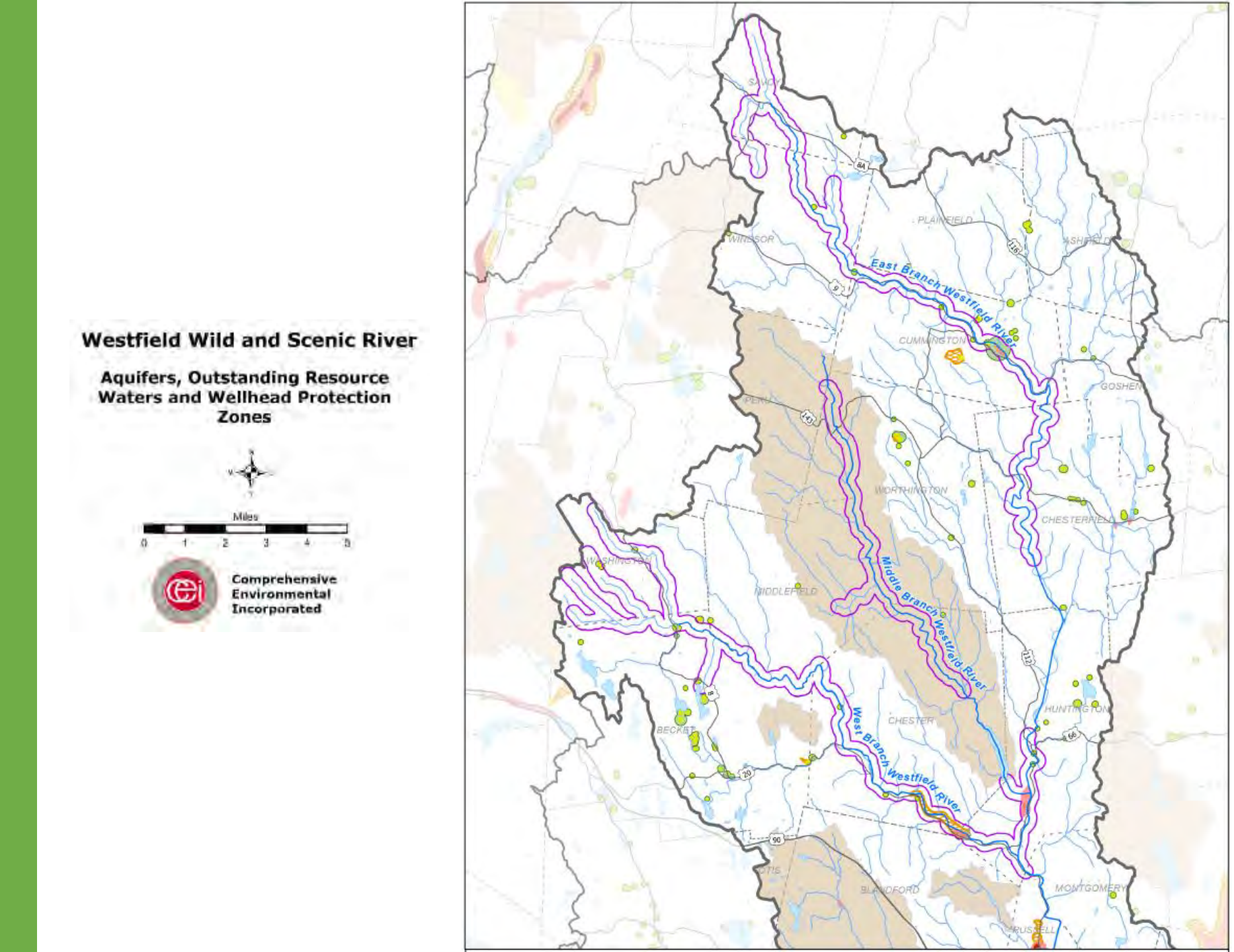
Comprehensive Environmental Incorporated

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Westfield Wild and Scenic River

Aquifers, Outstanding Resource Waters and Wellhead Protection Zones



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Aquifers

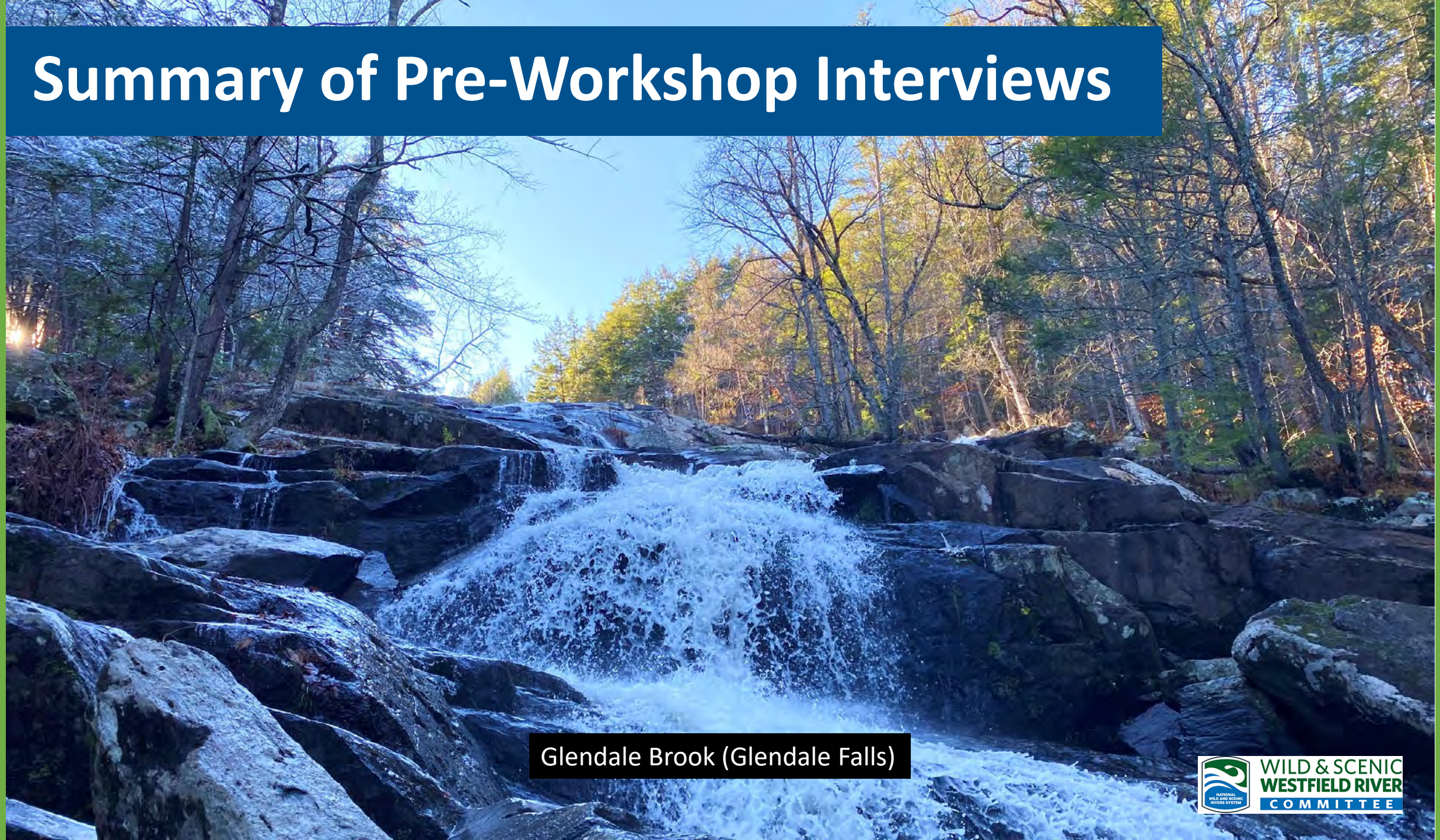
- High Yield
- Medium Yield

Outstanding Resource Waters

- Public Water Supply Watershed
- Retired Public Water Supply

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Summary of Pre-Workshop Interviews



Glendale Brook (Glendale Falls)

WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Pre-Workshop Interviews

- **Coldwater fisheries** – *value of resource, lack of in-stream diversity, potential impacts from increasing intensity of storms.*
- **Excellent water quality**
- **Dam and stream connectivity concerns** – *undersized or failing structures, poor design of road crossings, water withdrawal*
- **Development concerns** – *shoreline development, loss of historic character along river, town planning regulations, bank erosion*
- **Funding challenges**

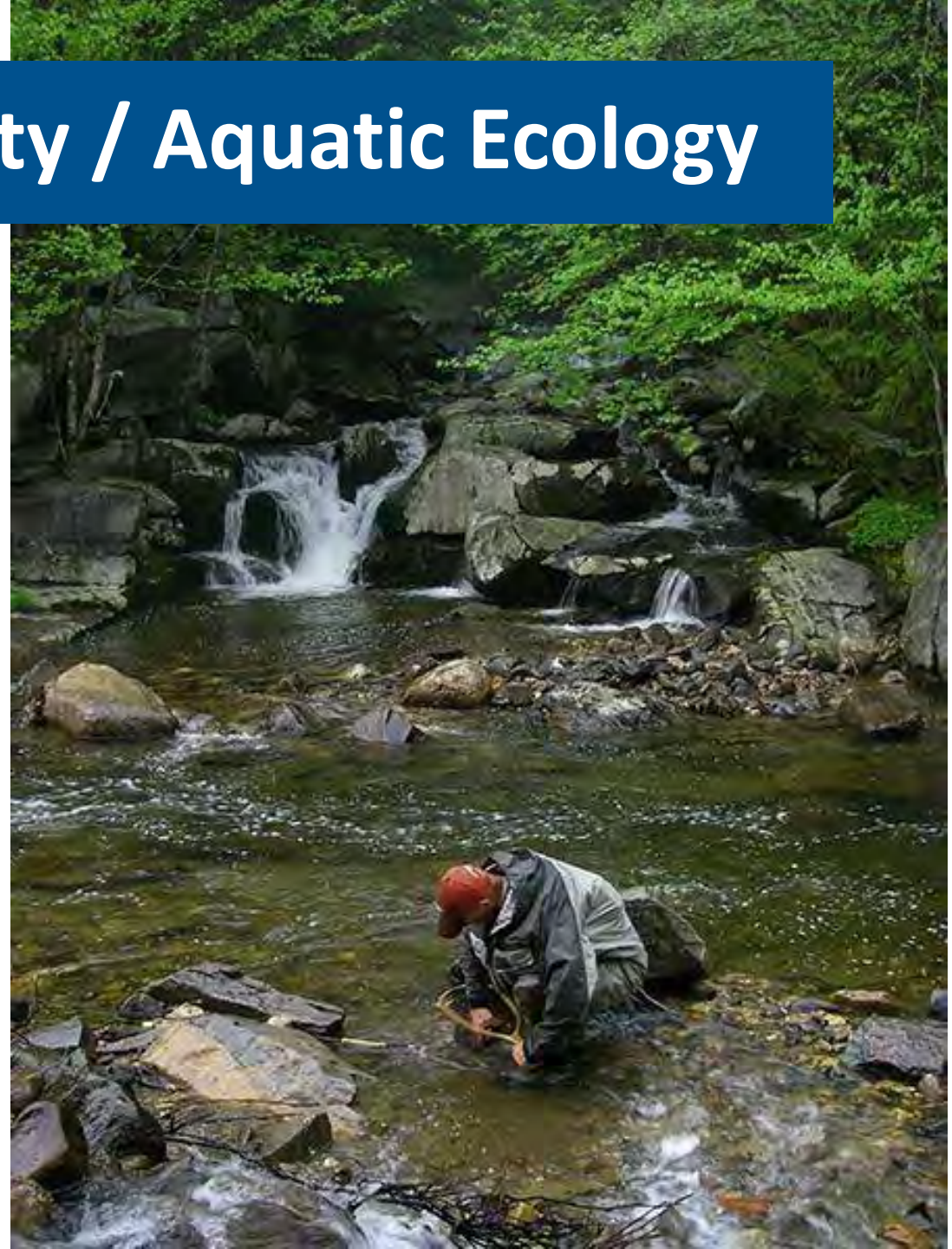
Water Resources Working Group

– Key Topics

- Water Quality (Physical / Chemical)
- Aquatic Ecology
- Stream Channel Integrity/Connectivity
- Other


Chesterfield Gorge

Water Quality / Aquatic Ecology



WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Pre-Workshop Interviews

Water Quality/Aquatic Ecology

"The cold, clean water of the upper Westfield watershed is becoming increasingly uncommon."

Pre-workshop Survey Response

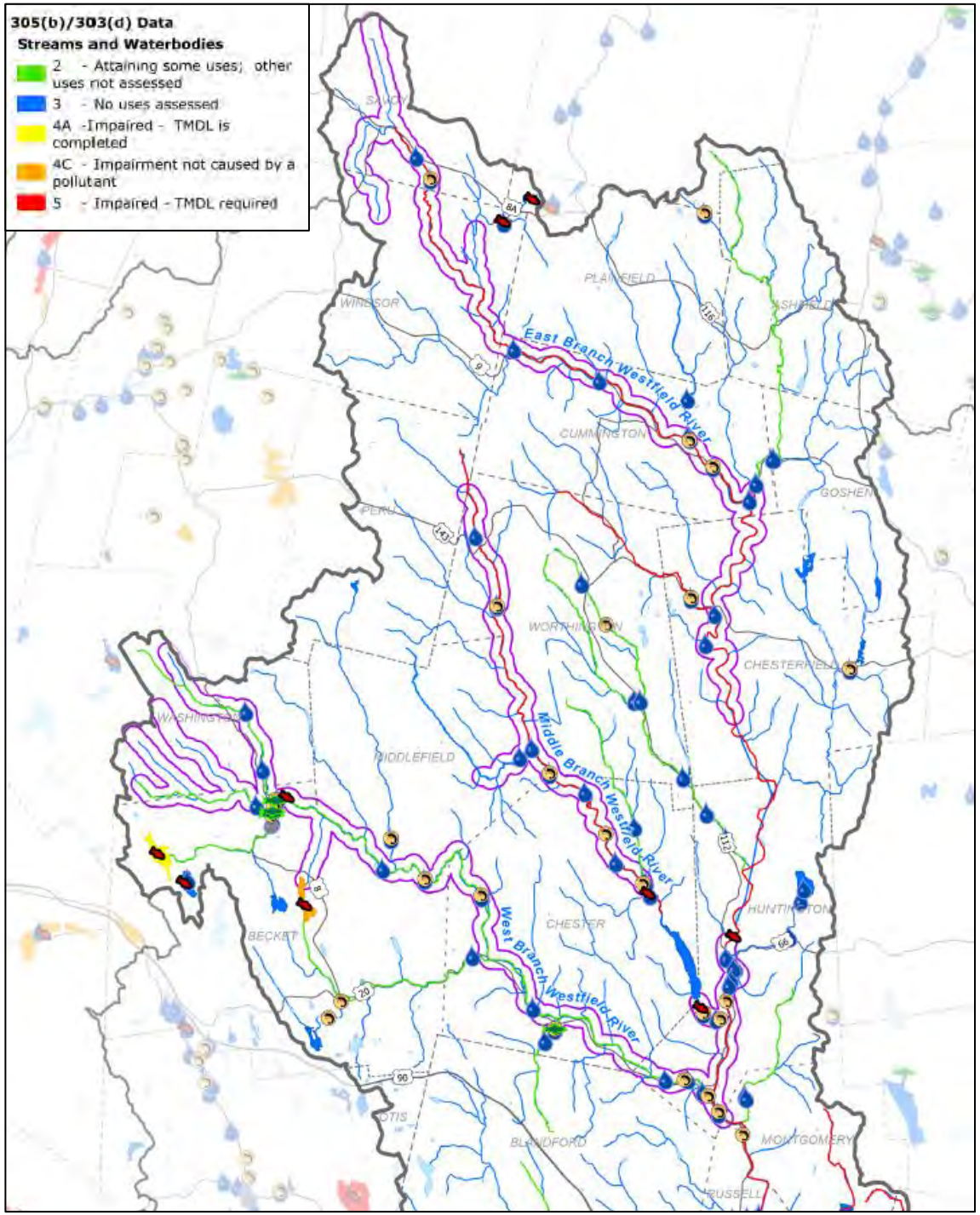
"The most unique aspects of the Westfield Basin are its large concentration of coldwater streams with wild Brook Trout and relatively minimal human development."

Pre-workshop Survey Response

WILD & SCENIC WESTFIELD RIVER COMMITTEE

305(b) / 303(d) Status

MA32-65	Middle Branch Westfield River	5- Temperature Impairment
MA32-13	West Falls Branch	5- Temperature Impairment
MA32-04	East Branch Westfield River	5- Temp and Entero Impairment
MA32-62	Abbott Brook	3- No Uses Assesed
MA32-43	Geer Brook	3- No Uses Assesed
MA32-53	Steep Bank Brook	3- No Uses Assesed
MA32-17	Depot Brook	2- Attaining some uses; others not assessed
MA32-10	Glendale Brook	2- Attaining some uses; others not assessed
MA32-32	Kinne Brook	2- Attaining some uses; others not assessed
MA32-11	Meadow Brook	2- Attaining some uses; others not assessed
MA32-44	Pond Brook	2- Attaining some uses; others not assessed
MA32-31	Sanderson Brook	2- Attaining some uses; others not assessed
MA32-18	Shaker Mill Brook	2- Attaining some uses; others not assessed
MA32-12	Swift River	2- Attaining some uses; others not assessed
MA32-20	Walker Brook	2- Attaining some uses; others not assessed
MA32-01	West Branch Westfield River	2- Attaining some uses; others not assessed
MA32-05	Westfield River	2- Attaining some uses; others not assessed
MA32-19	Yokum Brook	2- Attaining some uses; others not assessed
MA32-50	Bartlett Brook	2- Attaining some uses; others not assessed
MA32-45	Bronson Brook	2- Attaining some uses; others not assessed
MA32-42	Factory Brook	2- Attaining some uses; others not assessed
MA32-64	Fuller Brook	2- Attaining some uses; others not assessed
MA32-46	Kearney Brook	2- Attaining some uses; others not assessed
MA32-49	Mill Brook	2- Attaining some uses; others not assessed
MA32-54	North Branch Swift River	2- Attaining some uses; others not assessed
MA32-61	Roaring Brook	2- Attaining some uses; others not assessed
MA32-52	Shaw Brook	2- Attaining some uses; others not assessed
MA32-48	Stones Brook	2- Attaining some uses; others not assessed
MA32-47	Tower Brook	2- Attaining some uses; others not assessed
MA32-51	Westfield Brook	2- Attaining some uses; others not assessed
MA32-03	Middle Branch Westfield River	2- Attaining some uses; others not assessed



314 CMR 4

Cold Water Fishery

- Waters in which the mean of the **max. daily temperature over a 7-day period generally does not exceed 68°F…*unless naturally occurring***
- When other ecological factors are favorable (such as habitat), are **capable of supporting a year-round population of cold water stenothermal aquatic life** such as trout

314 CMR 4.06(1)(d)7.

Cold Water

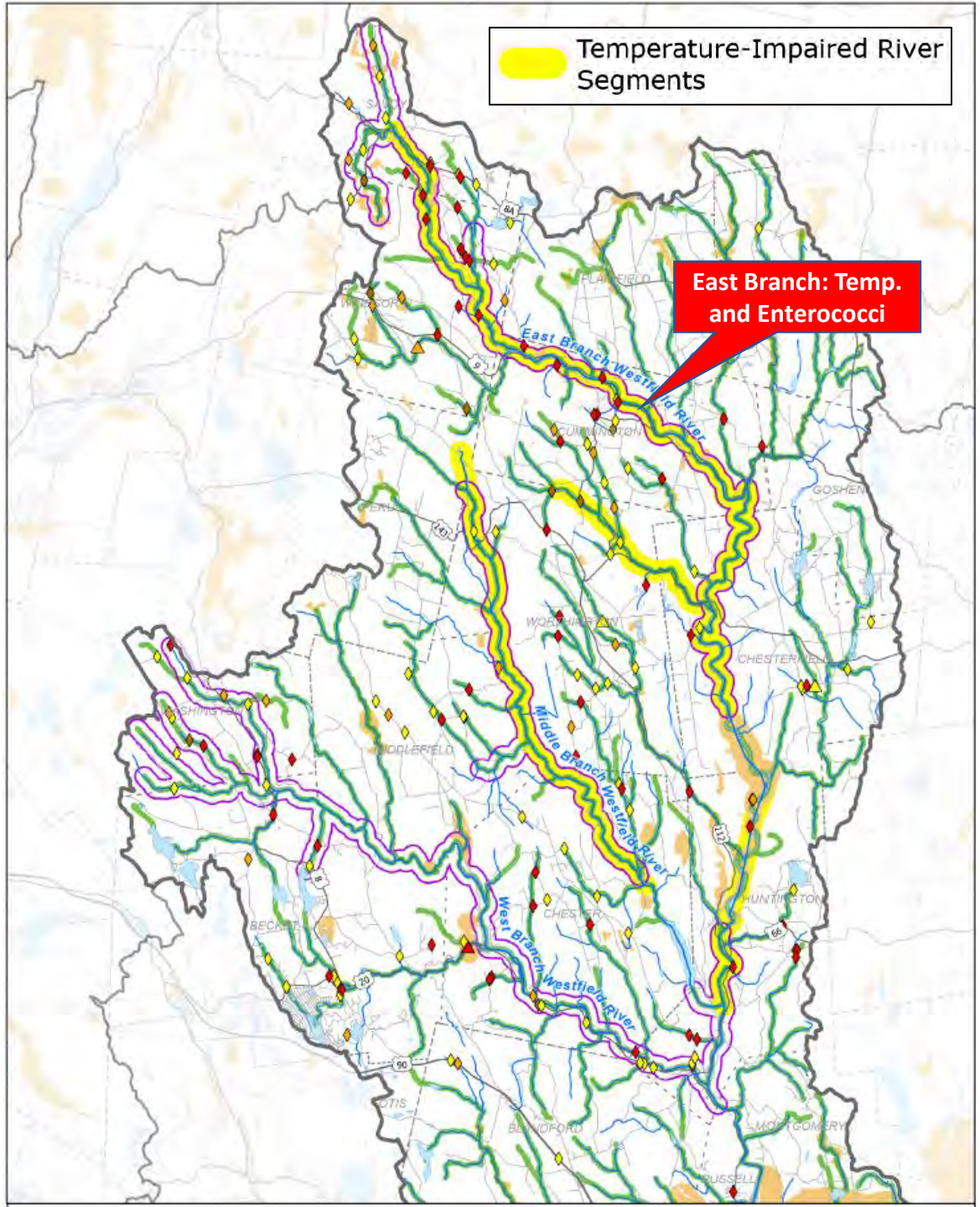
The MA Division of Fisheries and Wildlife (DFW) is responsible for identifying cold water fish populations that meet their protocol regardless of whether or not the water meets the cold water criteria in 314 CMR 4.00.

Where a cold water fish population has been identified by DFW as meeting their protocol, but the water has not been documented to meet the cold water criteria in 314 CMR 4.00, the MassDEP will protect the existing cold water fish population and its habitat as an existing use.

Temperature Impairments

Westfield River Wild & Scenic Section	Stream Miles	% of Wild & Scenic	Temp. -Impaired Stream Miles
East Branch	34.5	40.1	0
Middle Branch	14.3	16.6	13.2
West Branch	34.1	39.7	30.8
Mainstem	3.1	3.6	0

44 miles of W&S river impaired for temperature



Temperature Impairments

AUID	Stream Name	Temperature Impaired
MA32-04	East Branch Westfield River	Yes
MA32-65	Middle Branch Westfield River	Yes
MA32-13	West Falls Branch	Yes
MA32-62	Abbott Brook	No
MA32-50	Bartlett Brook	No
MA32-45	Bronson Brook	No
MA32-17	Depot Brook	No
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MA32-51	Westfield Brook	No
MA32-19	Yokum Brook	No
	Alder Meadow Brook	No
	Austin Brook	No
	Billings Brook	No
	Blair Brook	No
	Center Brook	No
	Childs Brook	No
	Clear Brook	No
	Cold Brook	No
	Coles Brook	No
	Cone Brook	No
	Cushman Brook	No
	Drowned Land Brook	No
	Ford Brook	No
	Goldmine Brook	No
	Griffin Brook	No
	Hamilton Brook	No
	Hume Brook	No
	Mica Mill Brook	No
	Mongue Meadow Brook	No
	Morgan Brook	No
	Moss Meadow Brook	No
	Otis Wait Brook	No
	Outflow of Center Pond	No
	Phelps Brook	No
	Pierce Brook	No
	Powell Brook	No
	Rudd Pond Brook	No
	Savery Brook	No
	Skunk Brook	No
	Smith Brook	No
	Steven Brook	No
	Sykes Brook	No
	Taylor Brook	No
	Tower Brook	No
	Trout Brook	No
	UNT to Depot Brook	No
	UNT to Glendale Brook	No
	UNT to Kinne Brook	No
	UNT to Middle Branch Westfield River	No
	UNT to Mill Brook	No
	UNT to North Branch Swift River	No
	UNT to Stones Brook	No
	UNT to Stones Brook	No
	UNT to Swift River	No
	UNT to Tower Brook	No
	UNT to UNT to Mill Brook	No
	UNT to West Branch Westfield River	No
	UNT to Westfield River	No
	UNT to Westfield River	No
	UNT to Westfield River	No
	UNT to Westfield River	No
	UNT to Whitmarsh Brook	No
	UNT to Windsor Jambs Br	No
	Watson Brook	No
	West Branch Walker Brook	No
	Whitmarsh Brook	No
	Windsor Jambs Brook	No
	Wolf Brook	No

Channel Integrity / Connectivity

"Like most watersheds in Massachusetts, the Westfield streams suffer, to some degree, from poorly-designed road crossings (culverts too small, perched culverts, etc.), dams, water withdrawal, and sedimentation and warming related to land cover and climate change."

Pre-workshop Survey Response

"Aquatic connectivity and high quality in-stream habitat are incredibly important to maintaining good ecosystem functioning and resilient aquatic organism populations."

Pre-workshop Survey Response

Culvert Inlet, Tributary to East Branch

Stream Connectivity

- **Dams, bridges, culverts (perched, undersized)**
- **Peak flow restrictions; climate change**
- **Fish/wildlife passage**

River Road Culvert (Windsor)

Upstream

Road Above Culvert

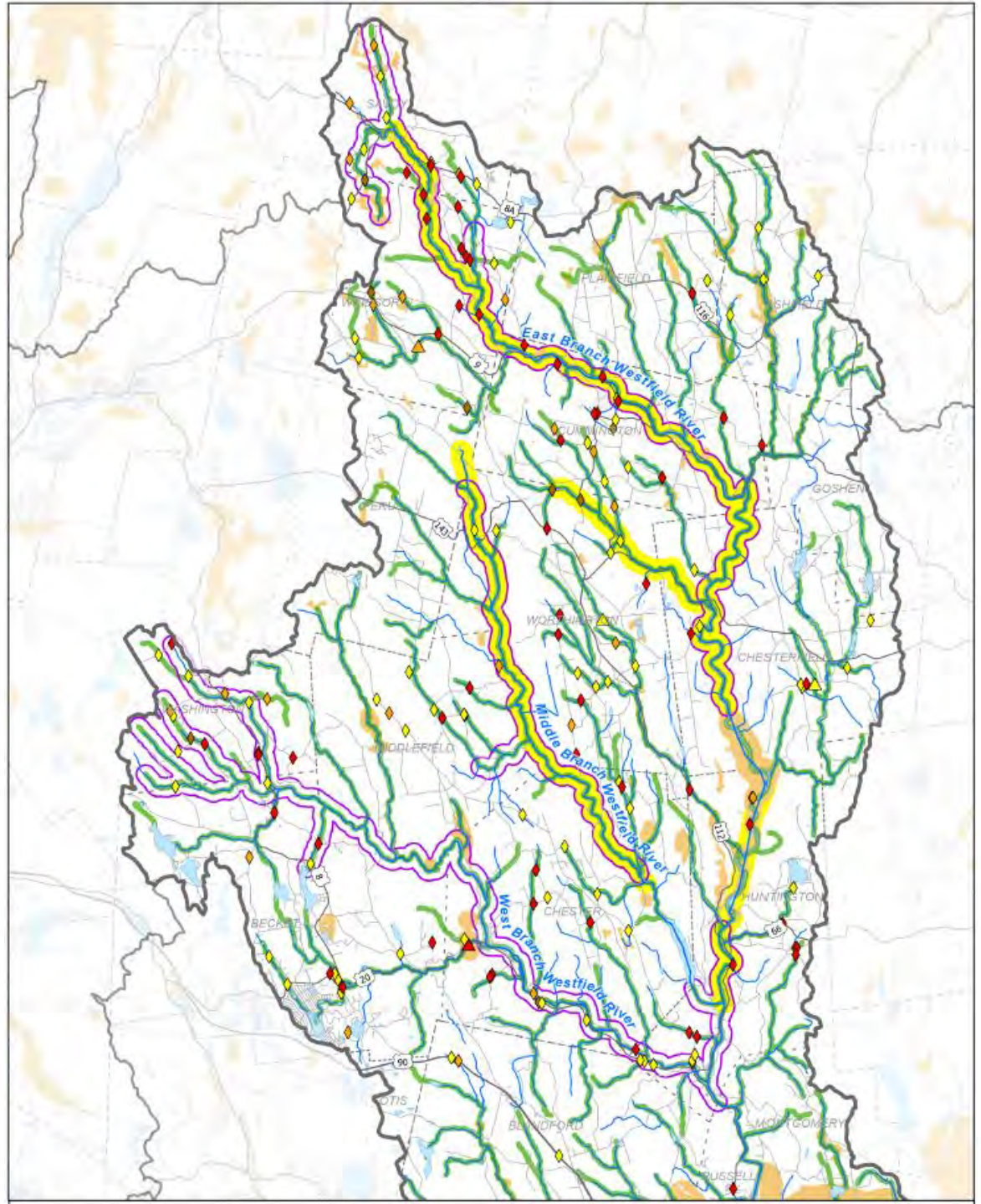
Culvert Outfall

Bank Failure / Erosion

Bank failure/erosion, Sanderson Brook (Chester)

Westfield Wild and Scenic River

Stream Barriers, Coldwater Fisheries and NHESP Priority and Estimated Habitats



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WILD & SCENIC WESTFIELD RIVER COMMITTEE

Group Exercise:

1: Identify Vulnerabilities and Strengths for each category

2: Identify and Prioritize Actions

3: Determine the Overall Priority Actions

Issue:
ultraviolet radiation

- Water quality
- Aquatic ecology
- Channel integrity /connectivity

Vulnerability: exposed skin

- Temperature impairments
- Undersized culverts
- Illicit discharges
- Fish passage barriers
- Unstable banks
- Lack of water quality data

Actions:

- apply sunscreen
- seek shade

- Upgrade culverts
- Stabilize banks
- Land conservation
- Additional monitoring
- ID/eliminate illicit discharges

Group Exercise: Stewardship Matrix

Westfield River Stewardship Matrix

Adapted from www.CommunityResilienceBuilding.org

Water Resources Working Group

Priority	Time
H - M - L	Short Long Ongoing

Physical/Chemical Water Quality	Location	Ownership	Vulnerability or Strength	Proposed Actions	
Aquatic Ecology	**Location**	**Ownership**	**Vulnerability or Strength**	**Proposed Actions**	
Stream Channel Integrity/Connectivity	**Location**	**Ownership**	**Vulnerability or Strength**	**Proposed Actions**	
Other	**Location**	**Ownership**	**Vulnerability or Strength**	**Proposed Actions**	

Wrap Up

Next Steps:

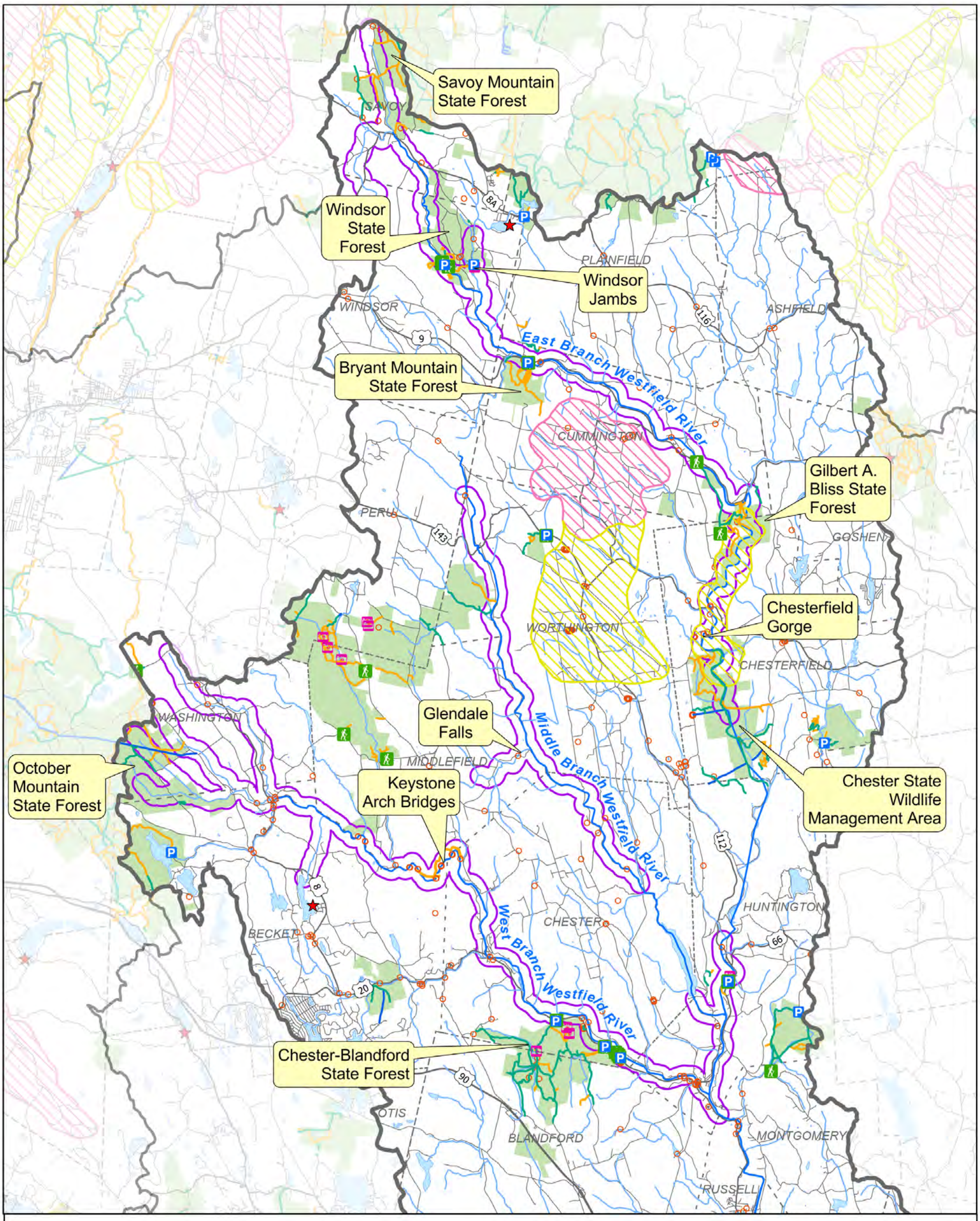
- **Complete working group sessions**
- **Develop priority actions for each group**
- **Develop draft Stewardship Plan**

WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Thank you for your time!

Next Workshop:

Terrestrial Resources Working Group
Thursday, November 12, 10am-12pm



Westfield Wild and Scenic River

Cultural, Historic, and Recreational Resources

Miles
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Comprehensive Environmental Incorporated

Data Sources: MassGIS, USGS, NAACC, CEI

- Westfield River
- Wild and Scenic River Segments
- Other Rivers and Streams
- Lake, Pond, Reservoir
- Major Roads
- Minor Roads
- Watershed Boundary
- Public Access to Water
- Historical Object, Structure or Cemetery
- Town Boundaries

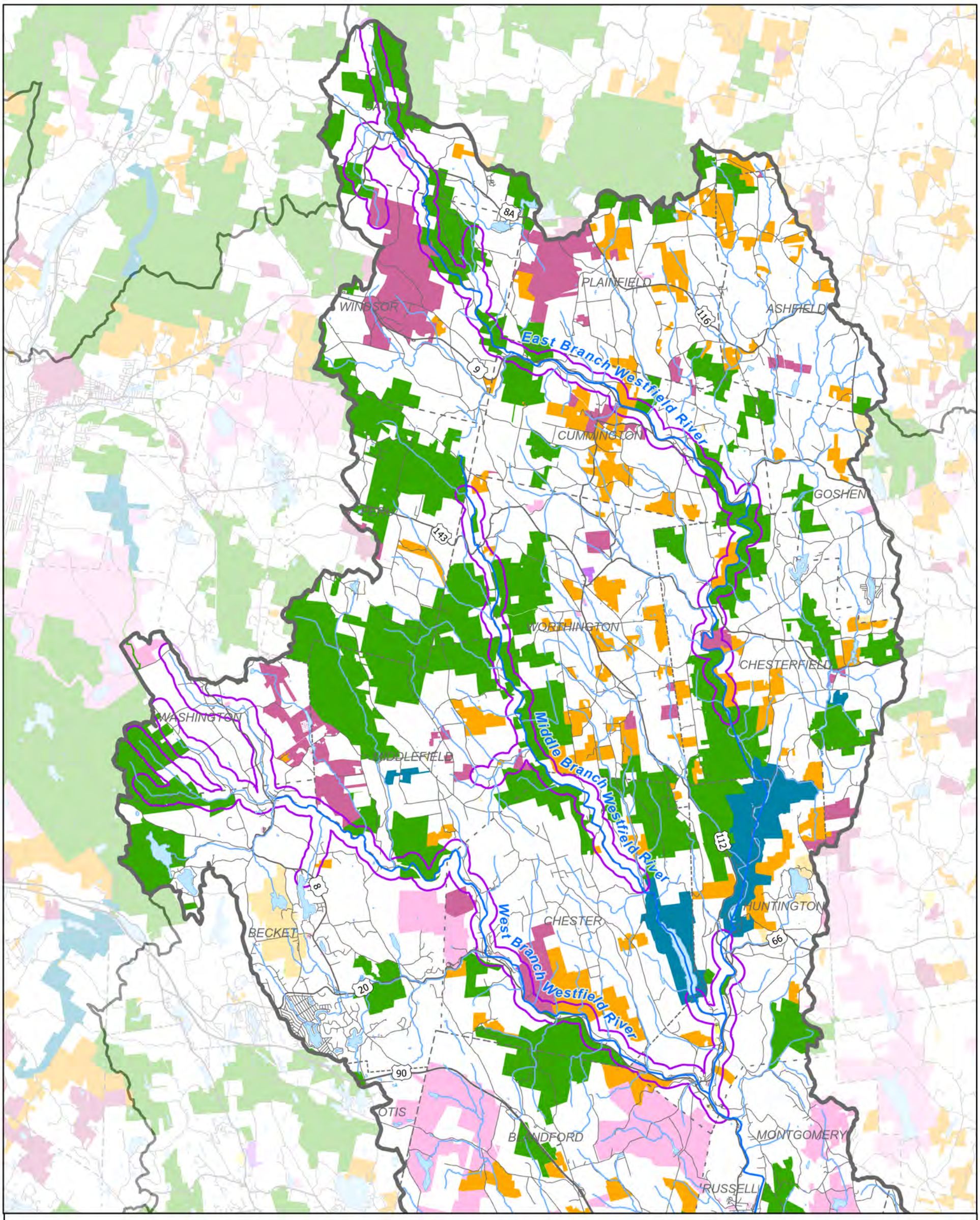
The Scenic Landscape Inventory

- Distinctive (Highest Scenic Quality)
- Noteworthy (Significant Scenic Quality)

DCR Roads and Trails

- Parking Area
- Trailhead
- Recreational Site
- Vista
- Forest Road/Trail
- Trail
- Other
- State Forests

11/13/2020



Westfield Wild and Scenic River

Protected and Recreational Open Space

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Miles
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- Town Boundaries

Protected and Recreational Open Space, by Owner

- Federal
- Conservation Organization
- Land Trust
- Municipal
- Private Non-Profit
- Private
- State
- Other

11/10/2020

Westfield Wild and Scenic River

Land Use

Comprehensive Environmental Incorporated

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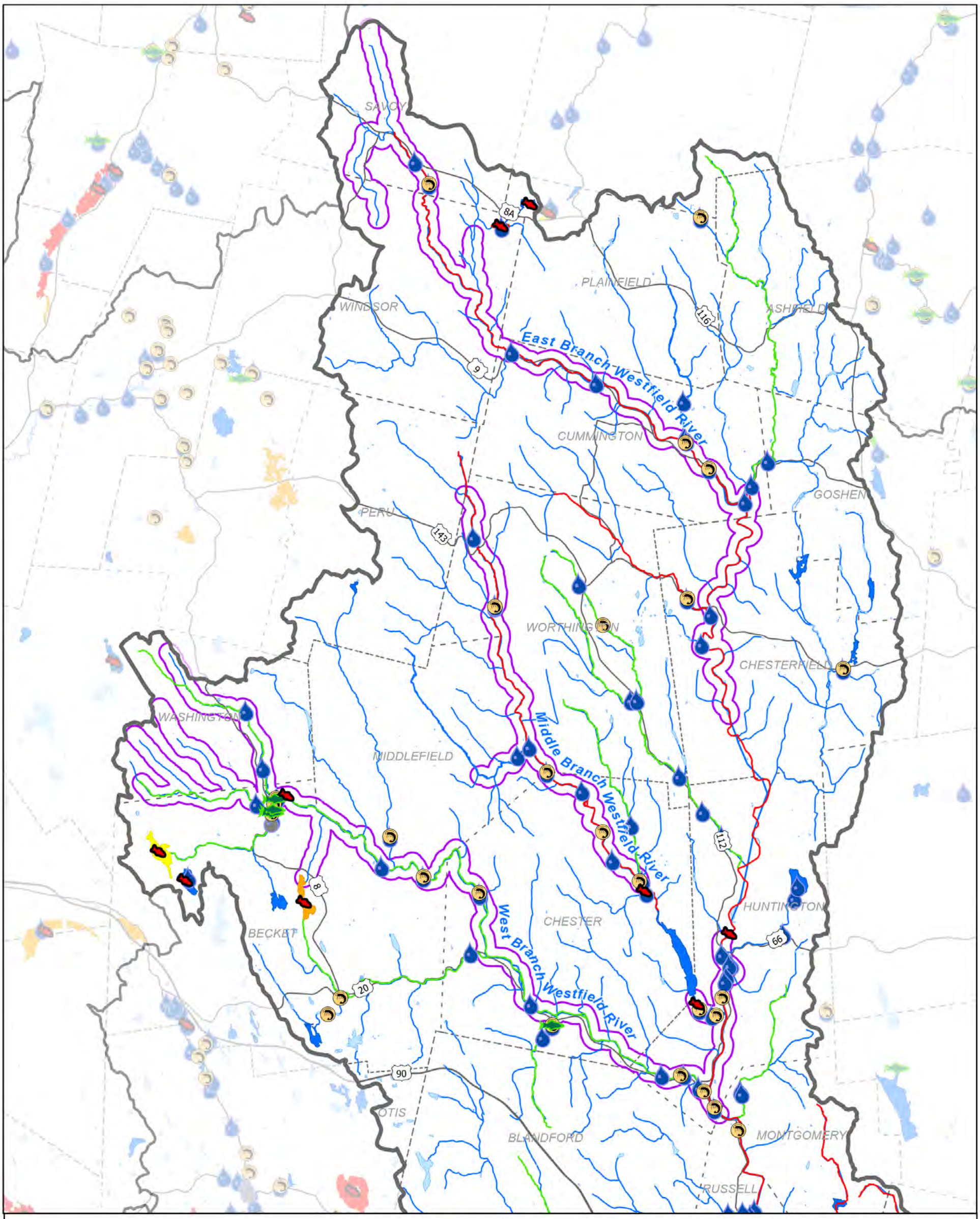
- Developed Land
- Barren Land
- Upland Forest
- Shrub/Scrub
- Grassland/Herbaceous
- Agriculture
- Wetlands

11/10/2020



Westfield Wild and Scenic River

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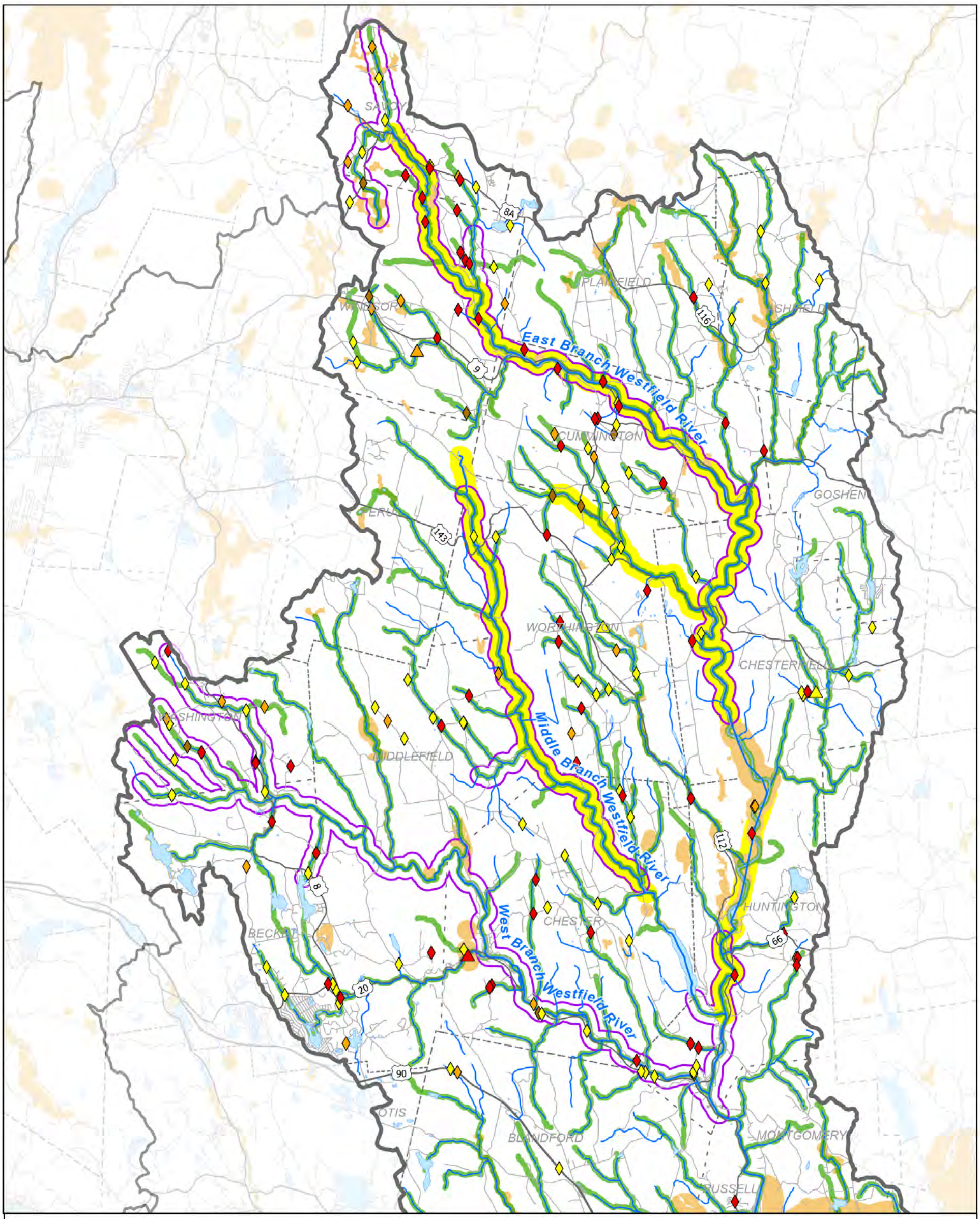
11/3/2020



Westfield Wild and Scenic River

Stream Barriers, Coldwater Fisheries and NHESP Priority and Estimated Habitats

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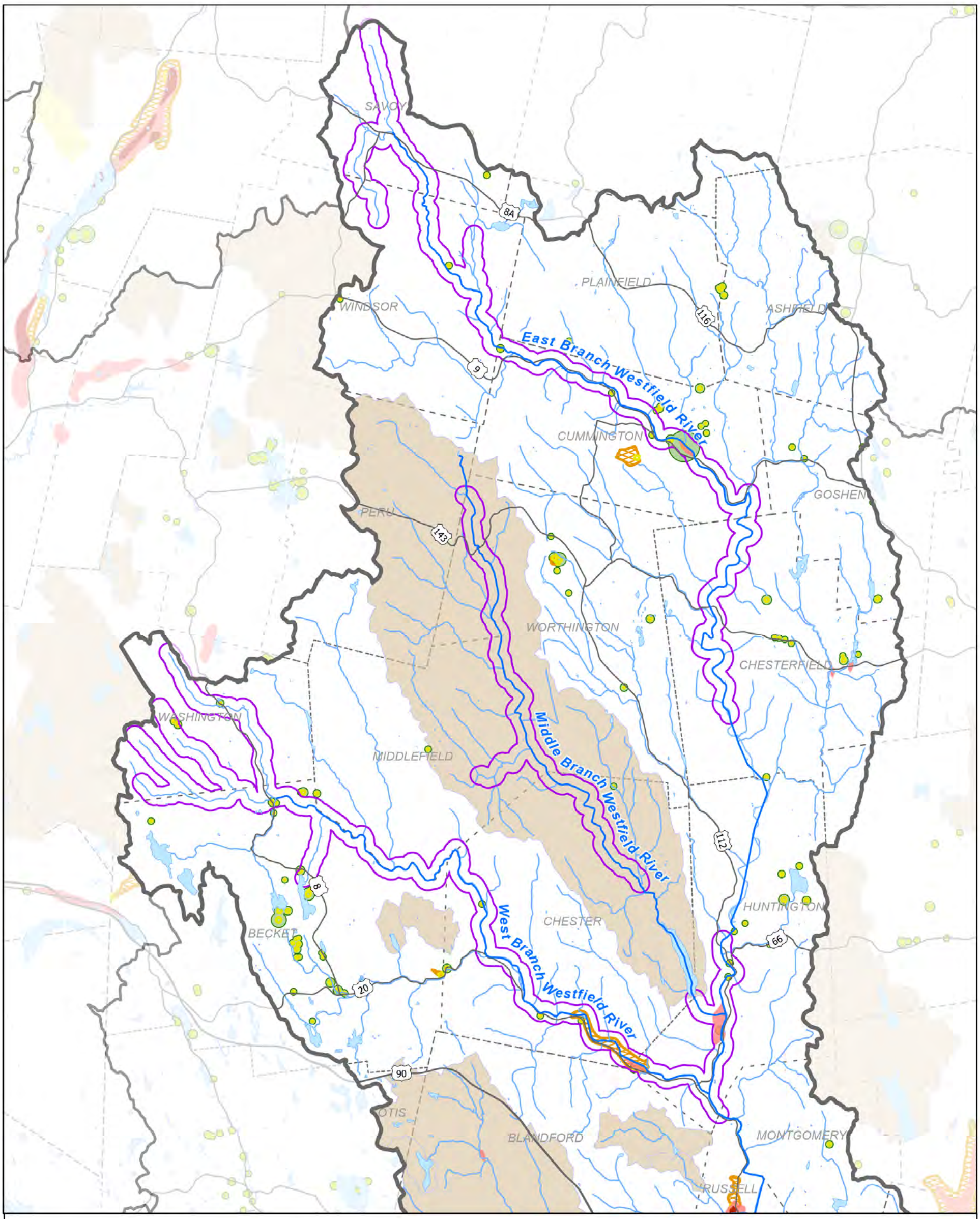

Westfield Wild and Scenic River

Aquifers, Outstanding Resource Waters and Wellhead Protection Zones

Miles

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- High Yield
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Outstanding Resource Waters

- Public Water Supply Watershed
- Retired Public Water Supply

10/30/2020

Stewardship Plan for the
WILD & SCENIC WESTFIELD RIVER

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Workshop 2:

Terrestrial Resources Working Group

November 12, 2020

Introductions

In case of Zoom problems:
edifranco@ceiengineers.com or 603-343-6311

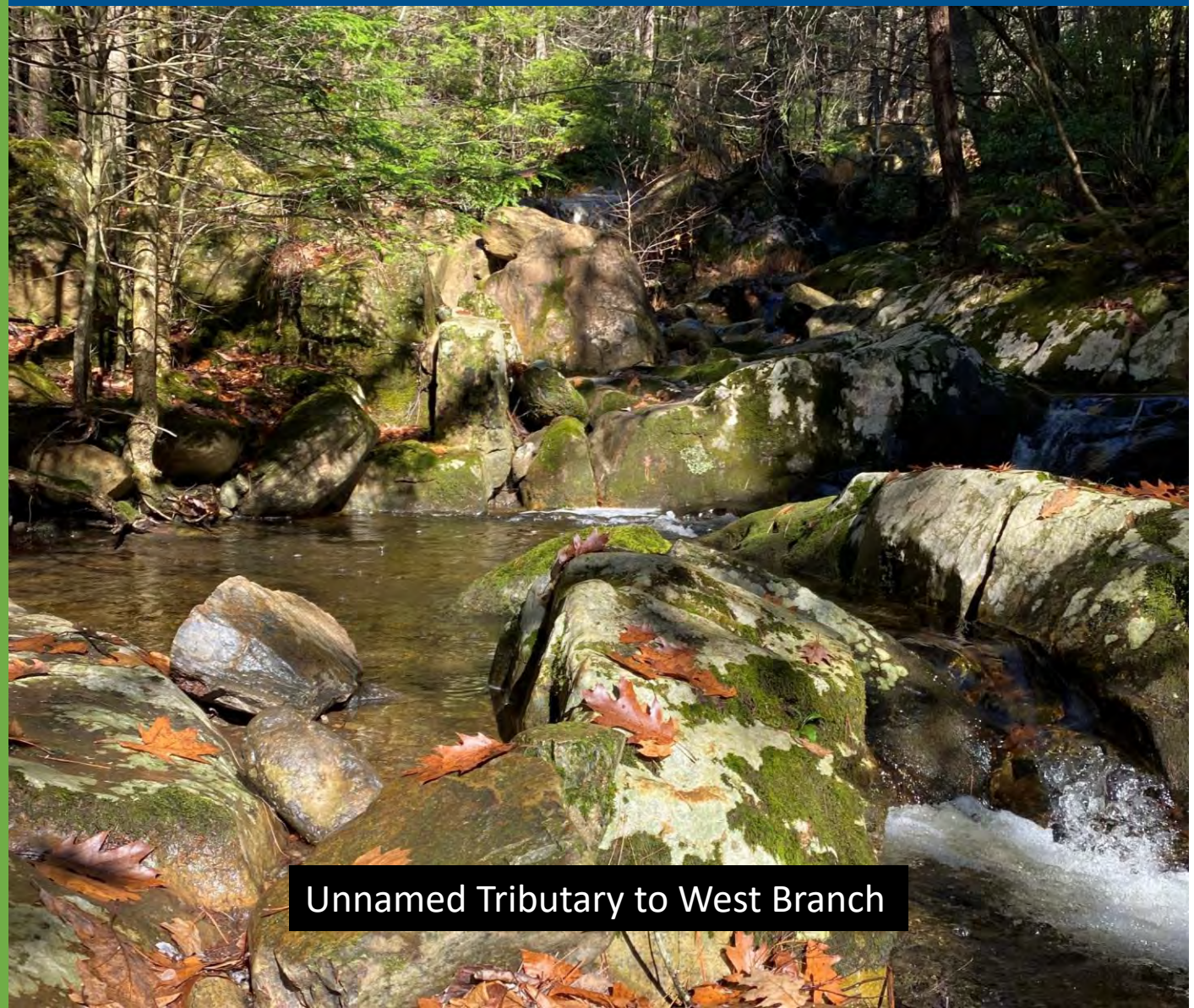
WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Stewardship Plan Goals

- **Provide a vision and strategy** to protect and enhance the water quality, ecology, historic resources, scenic qualities, and cultural resources of the Wild & Scenic Westfield River.
- **Prioritize** recommended actions
- Assess W&SWRC **management and organizational options**
- Assess **stakeholder outreach** and strategies to increase visibility and support of W&SWRC and its activities
- **Funding** options

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Workshop Topics/Schedule



Unnamed Tributary to West Branch

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Water quality, aquatic ecology, aquatic connectivity, channel integrity, aquatic invasive species, etc.

2. Terrestrial Resources Working Group

Thursday, November 12th, 10am -12pm

Terrestrial habitat, forest integrity and connectivity, conservation areas, native communities, etc.

3. Cultural/Land Uses Working Group

Tuesday, November 17th, 7-9 pm

Recreation, cultural landscape/historic character, scenic resources, citizen education/engagement, etc.

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Reference Maps

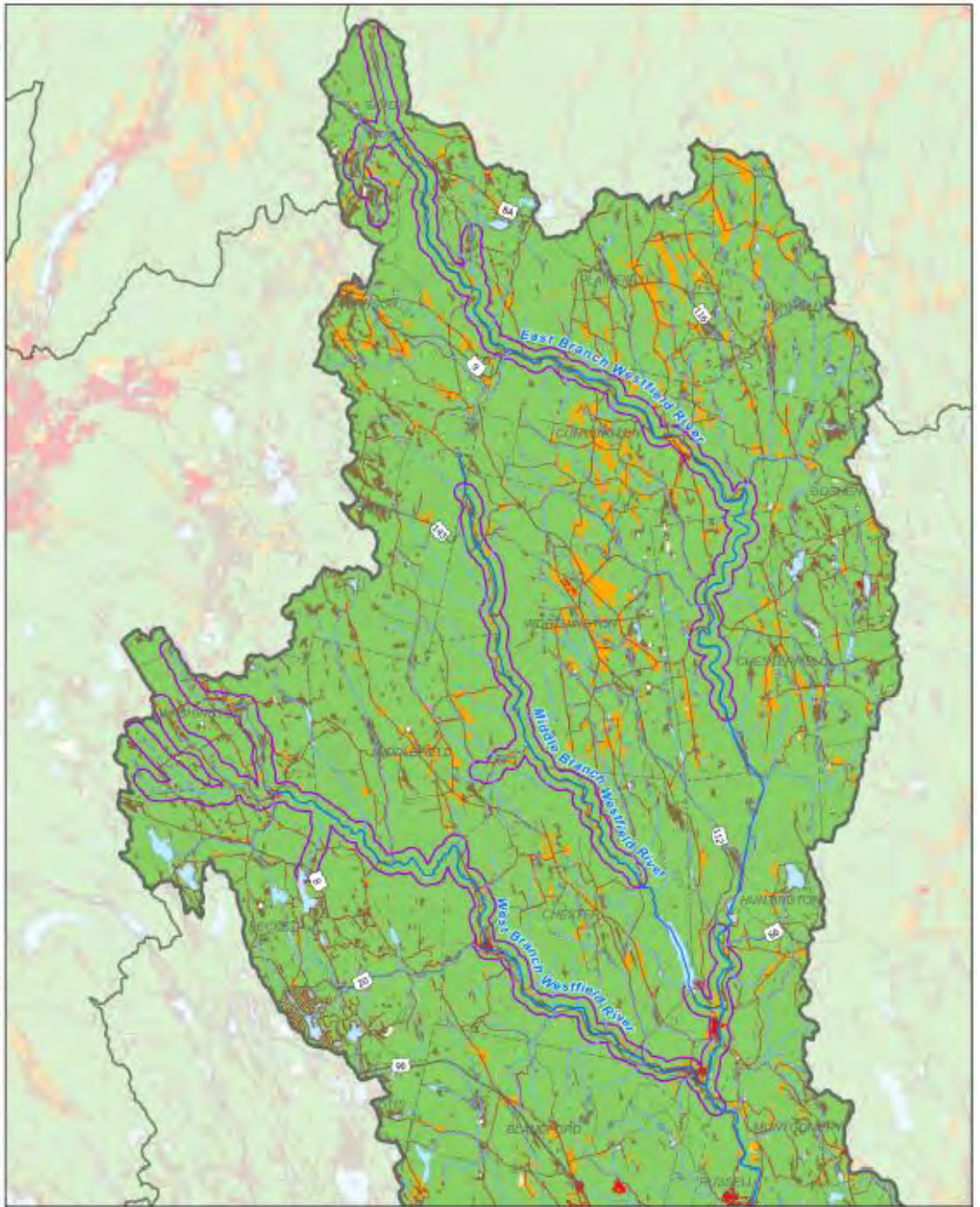
West Branch-Westfield River

WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Westfield Wild and Scenic River

Land Use

Comprehensive Environmental Incorporated



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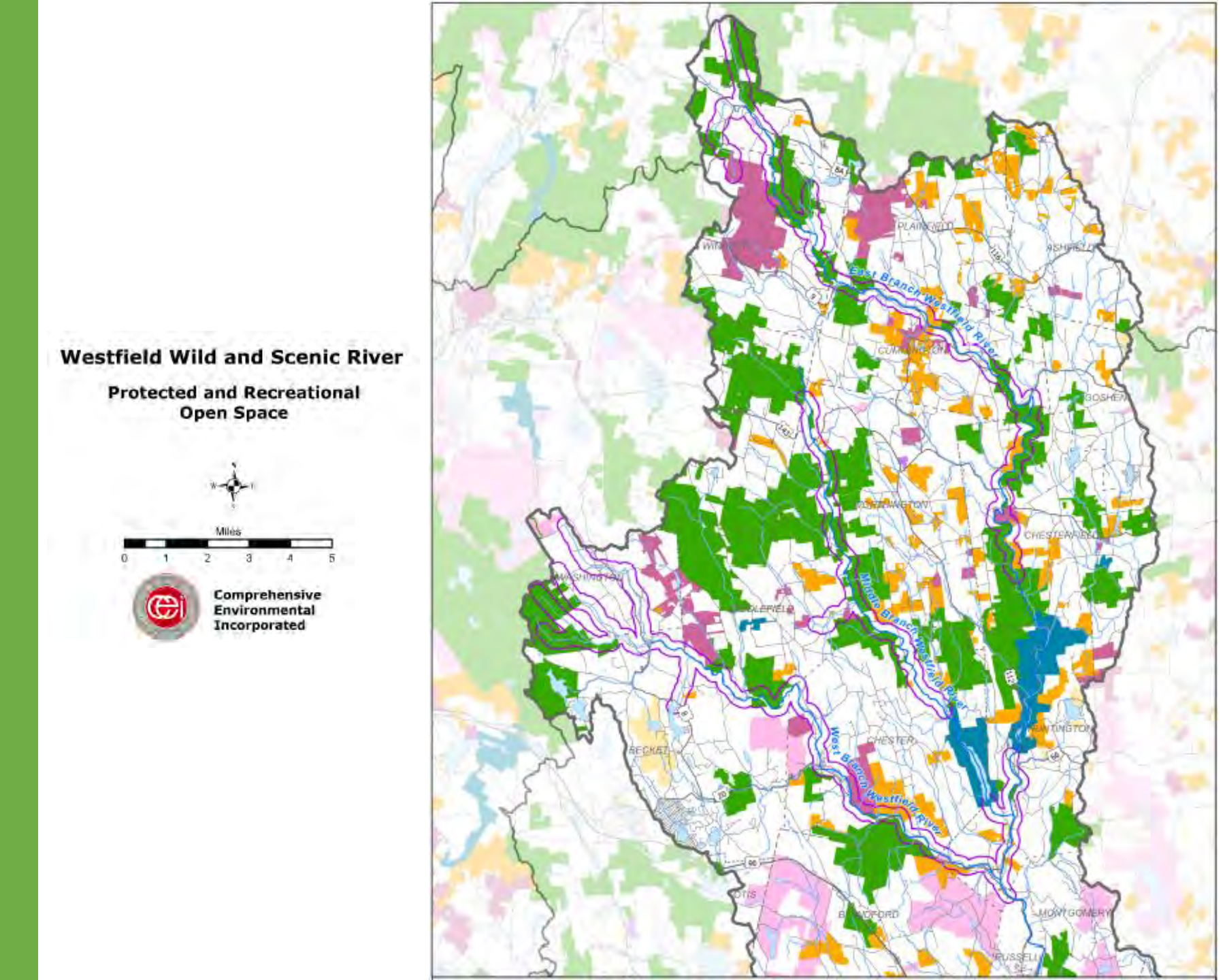
- Major Roads
- Minor Roads
- Watershed Boundary
- Town Boundaries

- Developed Land
- Barren Land
- Upland Forest
- Shrub/Scrub
- Grassland/Herbaceous
- Agriculture
- Wetlands

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Westfield Wild and Scenic River

Protected and Recreational Open Space



Miles
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Comprehensive Environmental Incorporated

- Westfield River
- Wild and Scenic River Segments
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- Minor Roads
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Protected and Recreational Open Space, by Owner

- Federal
- Conservation Organization
- Land Trust
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- State
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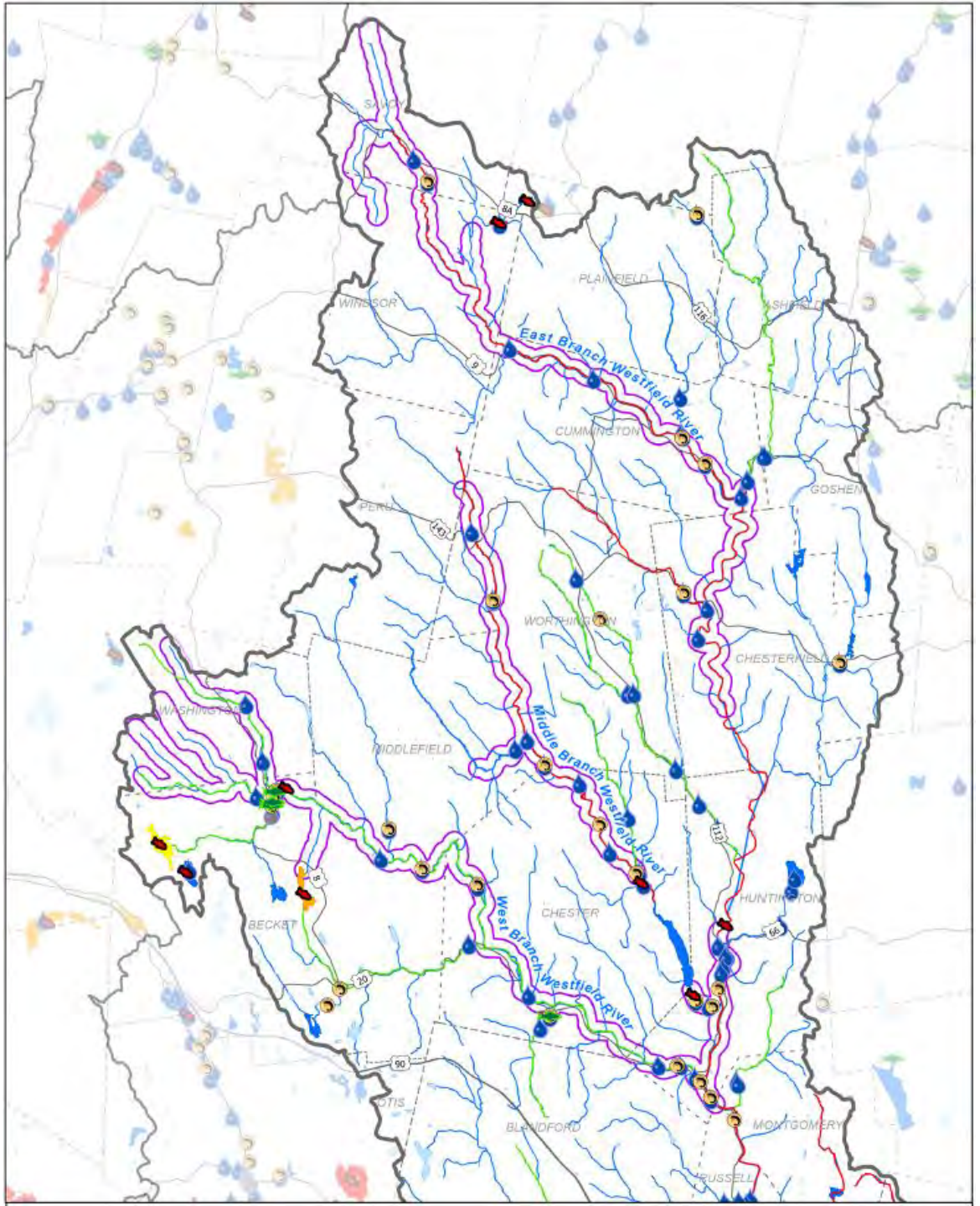
WILD & SCENIC WESTFIELD RIVER COMMITTEE

Westfield Wild and Scenic River

MassDEP Monitoring Stations and 303(d)/305(b) Data

Comprehensive Environmental Incorporated



305(b)/303(d) Data

Streams and Waterbodies

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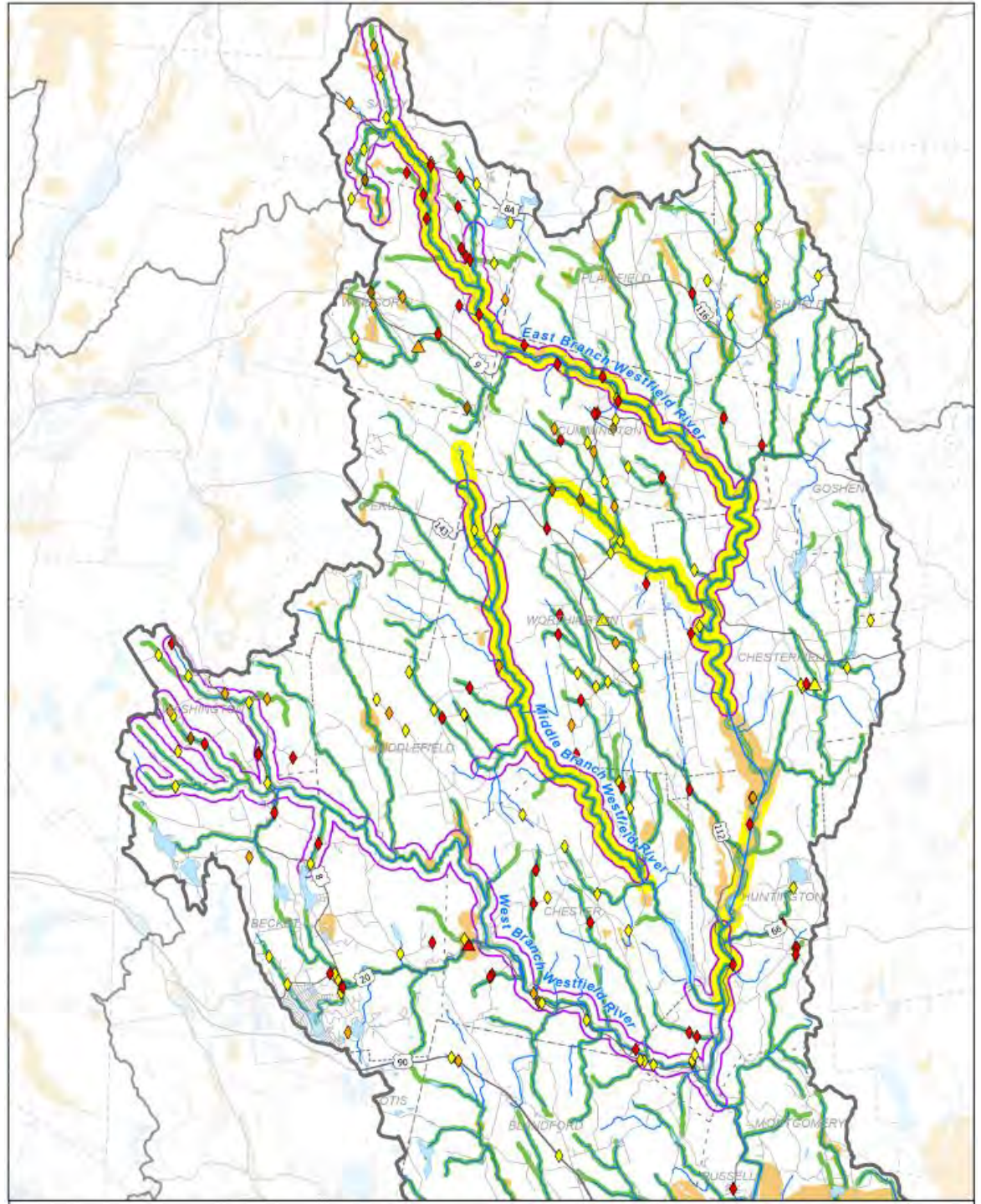
WILD & SCENIC WESTFIELD RIVER COMMITTEE

Westfield Wild and Scenic River

Stream Barriers, Coldwater Fisheries and NHESP Priority and Estimated Habitats



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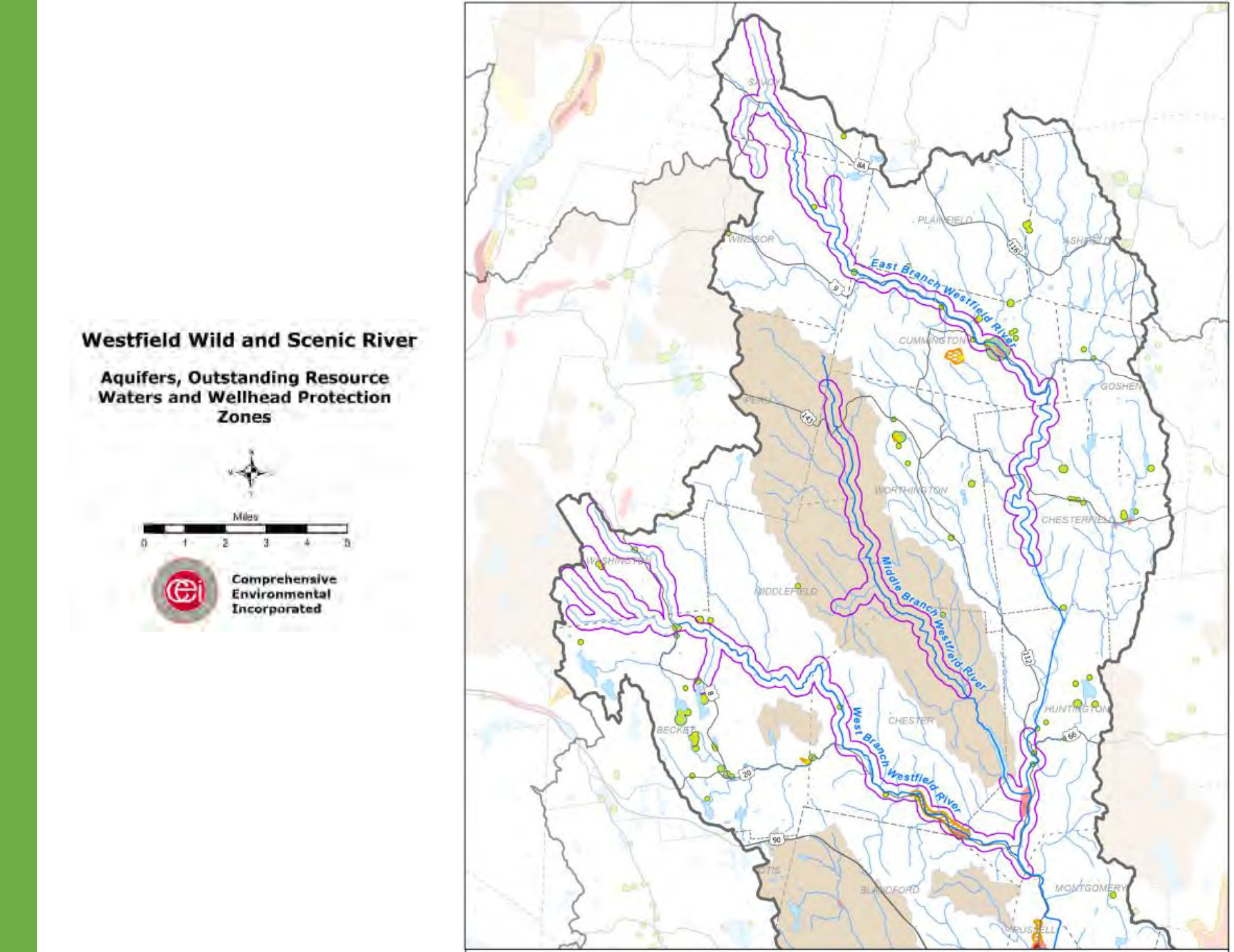
WILD & SCENIC WESTFIELD RIVER COMMITTEE

Westfield Wild and Scenic River

Aquifers, Outstanding Resource Waters and Wellhead Protection Zones



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- Westfield River
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- Other Rivers and Streams
- Lake, Pond, Reservoir
- Major Roads
- Watershed Boundary
- Town Boundaries
- DEP Approved Zone I
- DEP Approved Zone II
- Interim Wellhead Protection Area

Aquifers

- High Yield
- Medium Yield

Outstanding Resource Waters

- Public Water Supply Watershed
- Retired Public Water Supply

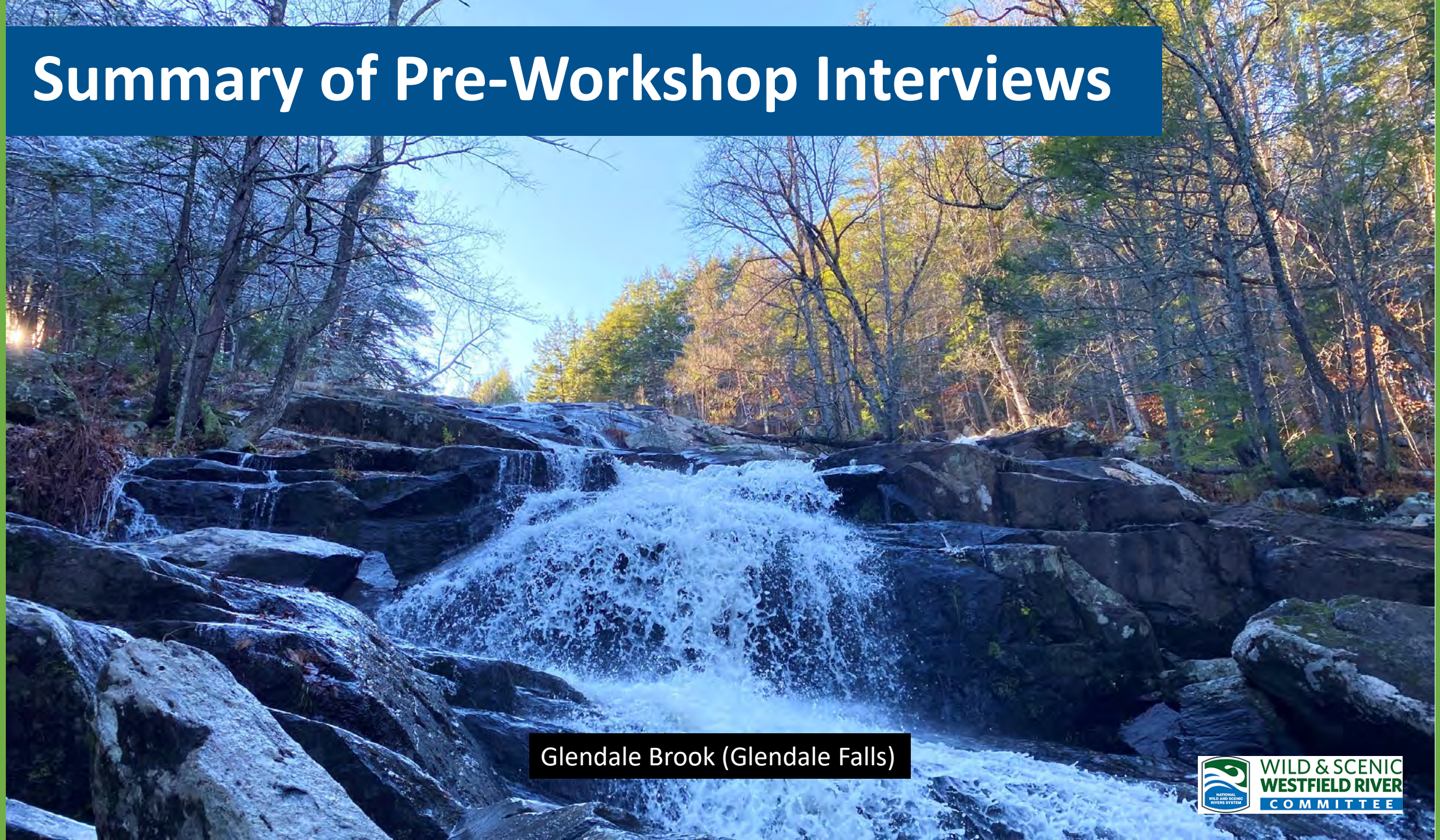
WILD & SCENIC WESTFIELD RIVER COMMITTEE

Terrestrial Resources Working Group

– Key Topics

- Land Use
- Land protection/conservation priorities
- Forest integrity and connectivity
- Native forest/plant communities
- Other

Summary of Pre-Workshop Interviews



Glendale Brook (Glendale Falls)

WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Pre-Workshop Interviews – Terrestrial Resources

Major Themes of Interview Feedback

- **Wildlife corridors:** *intact segments of wild lands*
- **Recreation impacts:** *hikers, ATVs, parking at trailheads*
- **Riparian clearing:** *land development, agriculture*
- **Invasive plants:** *Japanese knotweed, garlic mustard, oriental bittersweet, etc.*

Land Use

WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

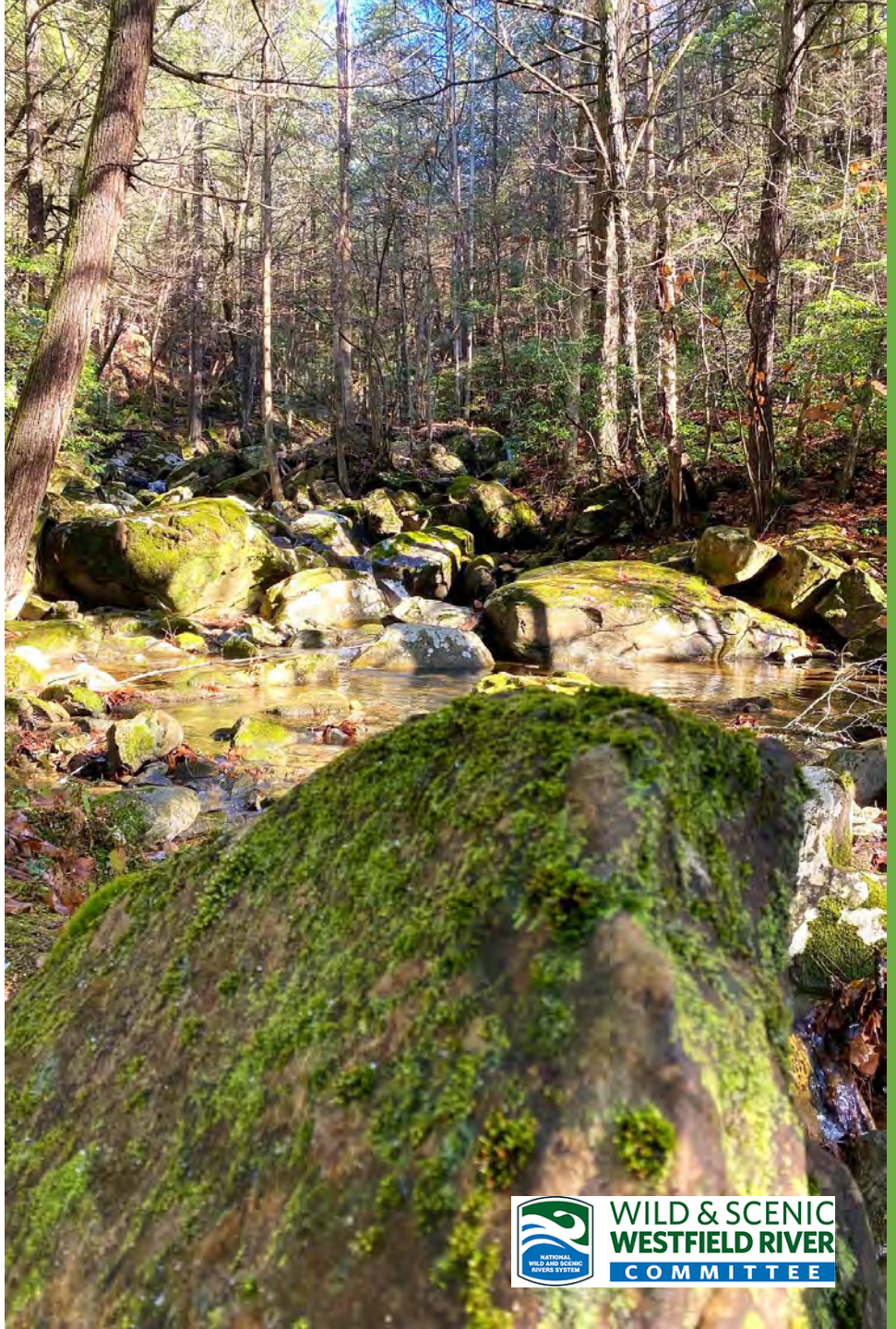
Pre-Workshop Interviews Land Use

"The ten towns we serve still have segments of contiguous wild lands creating important wildlife corridors."

Pre-workshop Survey Response

"Recreational activities trample sensitive habitats, cause bank erosion, and degrade water quality."

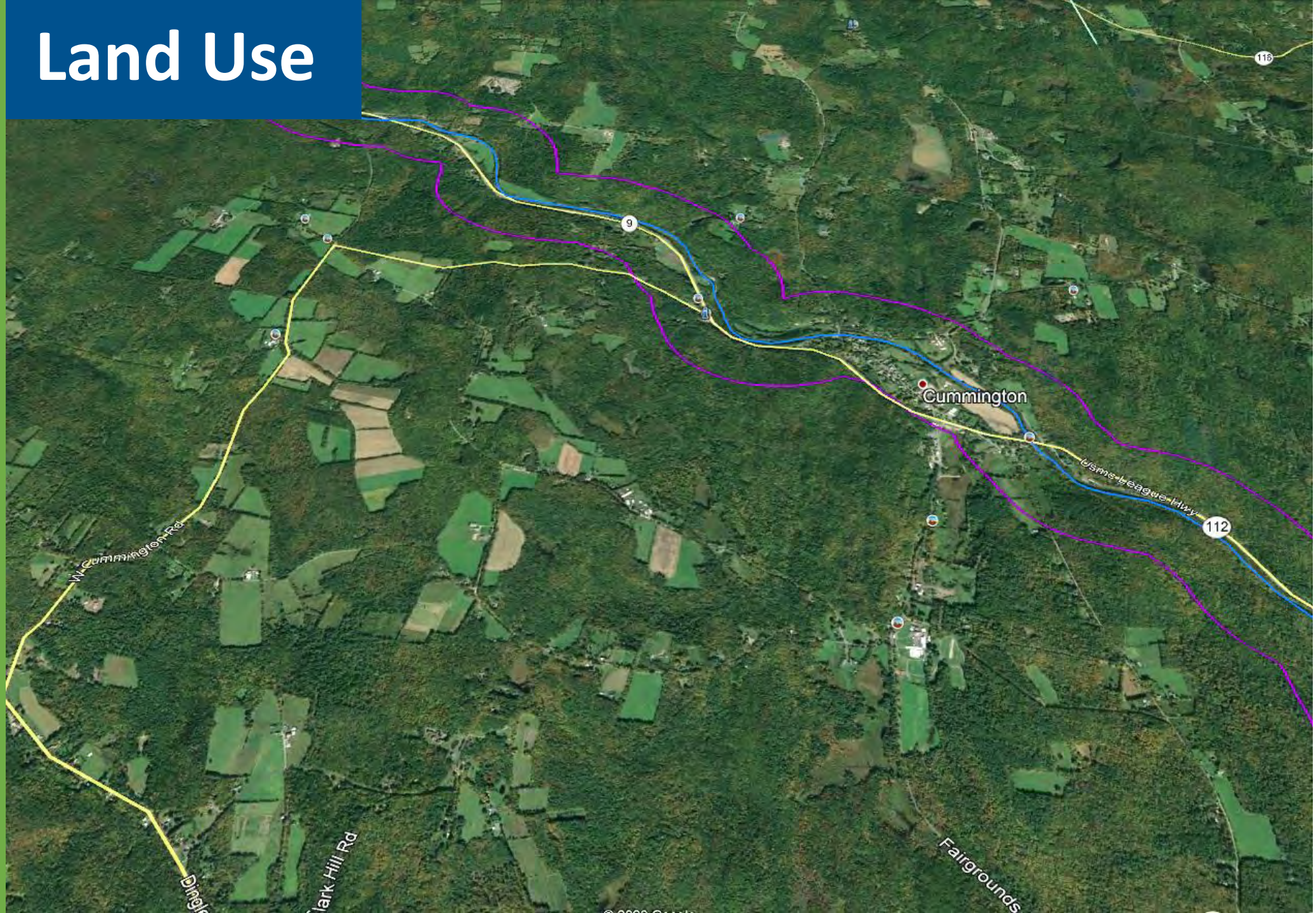
Pre-workshop Survey Response



Land Use


Surriner Ln
Benton Hill Rd
Town Hill Rd
Surriner Rd
Bancroft Rd
Main St
8
WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Land Use



WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Land Use

Knightsville Dam

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Pre-Workshop Interviews

Land Protection / Conservation Priorities

"Land acquisition is necessary to protect particularly important and vulnerable lands along the river."

Pre-workshop Survey Response

"Need to prioritize land for conservation."

Pre-workshop Survey Response

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Protection of Native Plants / Forests

WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Pre-Workshop Interviews

Protection of Native Plants/Forests

"Invasive plants are a threat that needs broad and well-funded management."

Pre-workshop Survey Response

"I have watched the two fields and the Knightville Dam Basin fill with invasive plants. I have watched as knotweed was spread by maintenance crews along the road to the headwaters of the Middle Branch and along the East Branch in Windsor."

Pre-workshop Survey Response

"Forested riparian zones are very important to water quality, habitat quality, and prevention of erosion."

Pre-workshop Survey Response

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Group Exercise:

1: Identify Vulnerabilities and Strengths for each category

2: Identify and Prioritize Actions

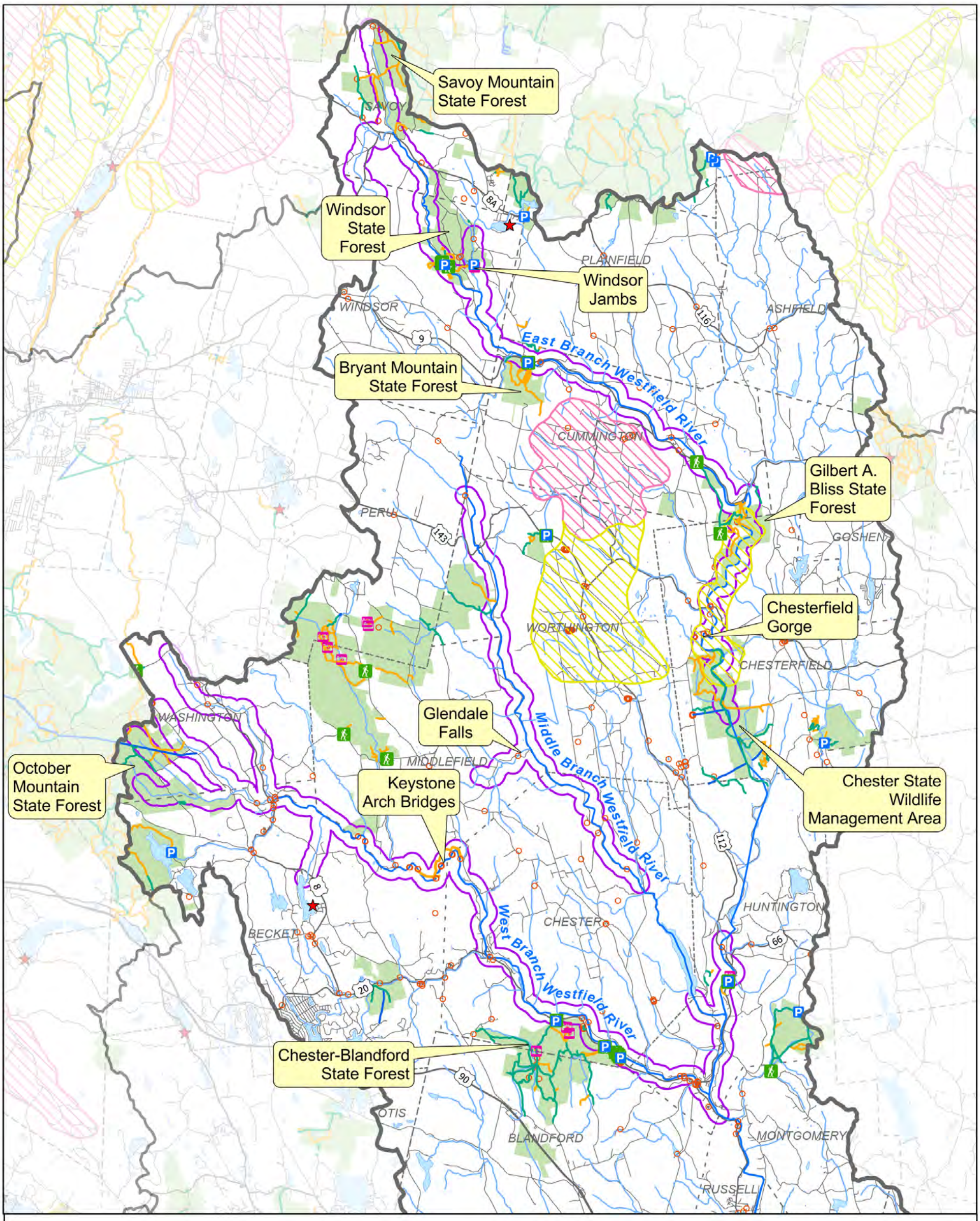
3: Determine the Overall Priority Actions

WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Thank you for your time!

Next Workshop:

Cultural Resources Working Group
Tuesday, November 17, 7-9pm



Westfield Wild and Scenic River

Cultural, Historic, and Recreational Resources

Miles
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Comprehensive Environmental Incorporated

Data Sources: MassGIS, USGS, NAACC, CEI

- Westfield River
- Wild and Scenic River Segments
- Other Rivers and Streams
- Lake, Pond, Reservoir
- Major Roads
- Minor Roads
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- Public Access to Water
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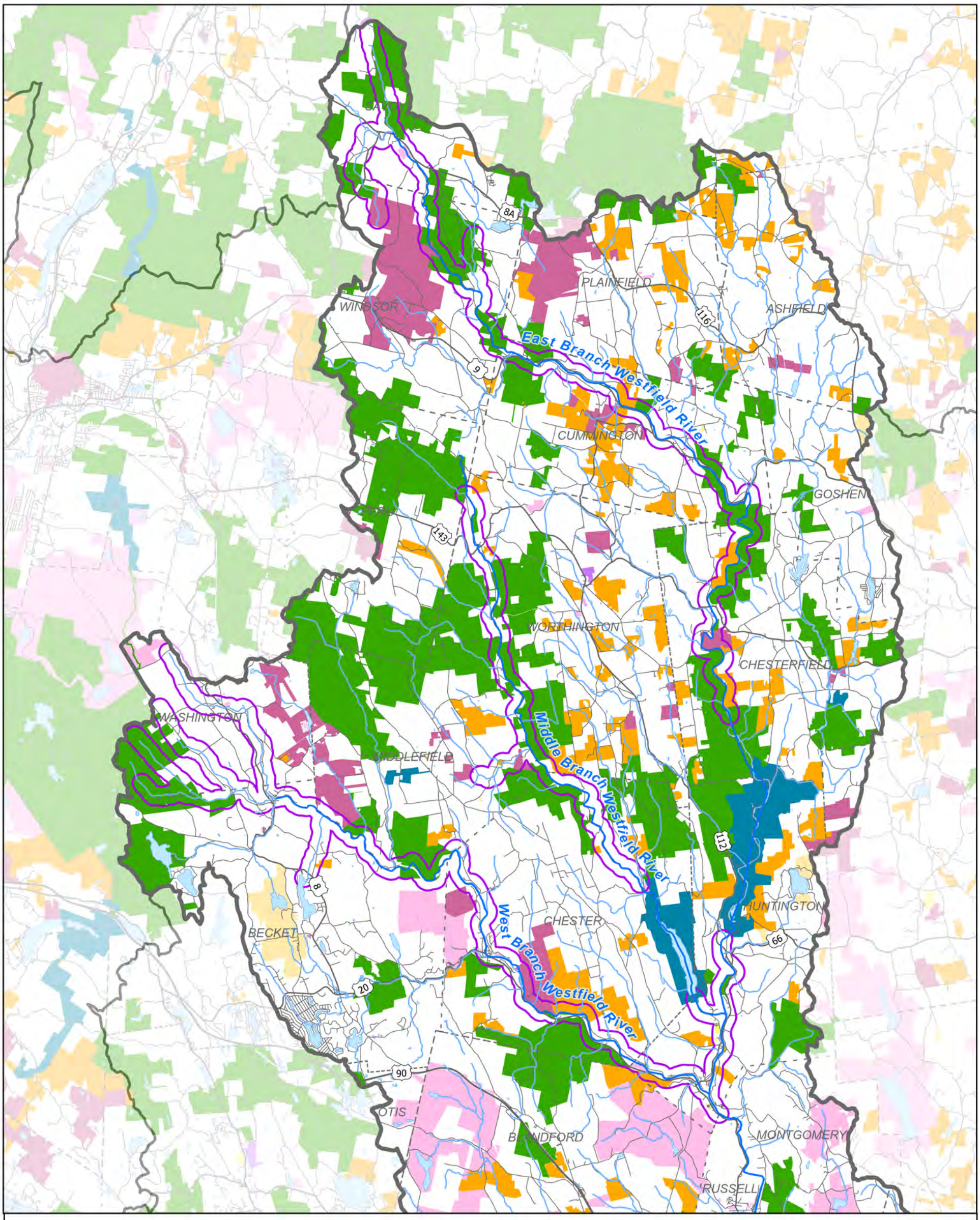
The Scenic Landscape Inventory

- Distinctive (Highest Scenic Quality)
- Noteworthy (Significant Scenic Quality)

DCR Roads and Trails

- Parking Area
- Trailhead
- Recreational Site
- Vista
- Forest Road/Trail
- Trail
- Other
- State Forests

11/13/2020



Westfield Wild and Scenic River

Protected and Recreational Open Space

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Comprehensive Environmental Incorporated

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Protected and Recreational Open Space, by Owner

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- State
- Other

11/10/2020

Westfield Wild and Scenic River

Land Use

Comprehensive Environmental Incorporated

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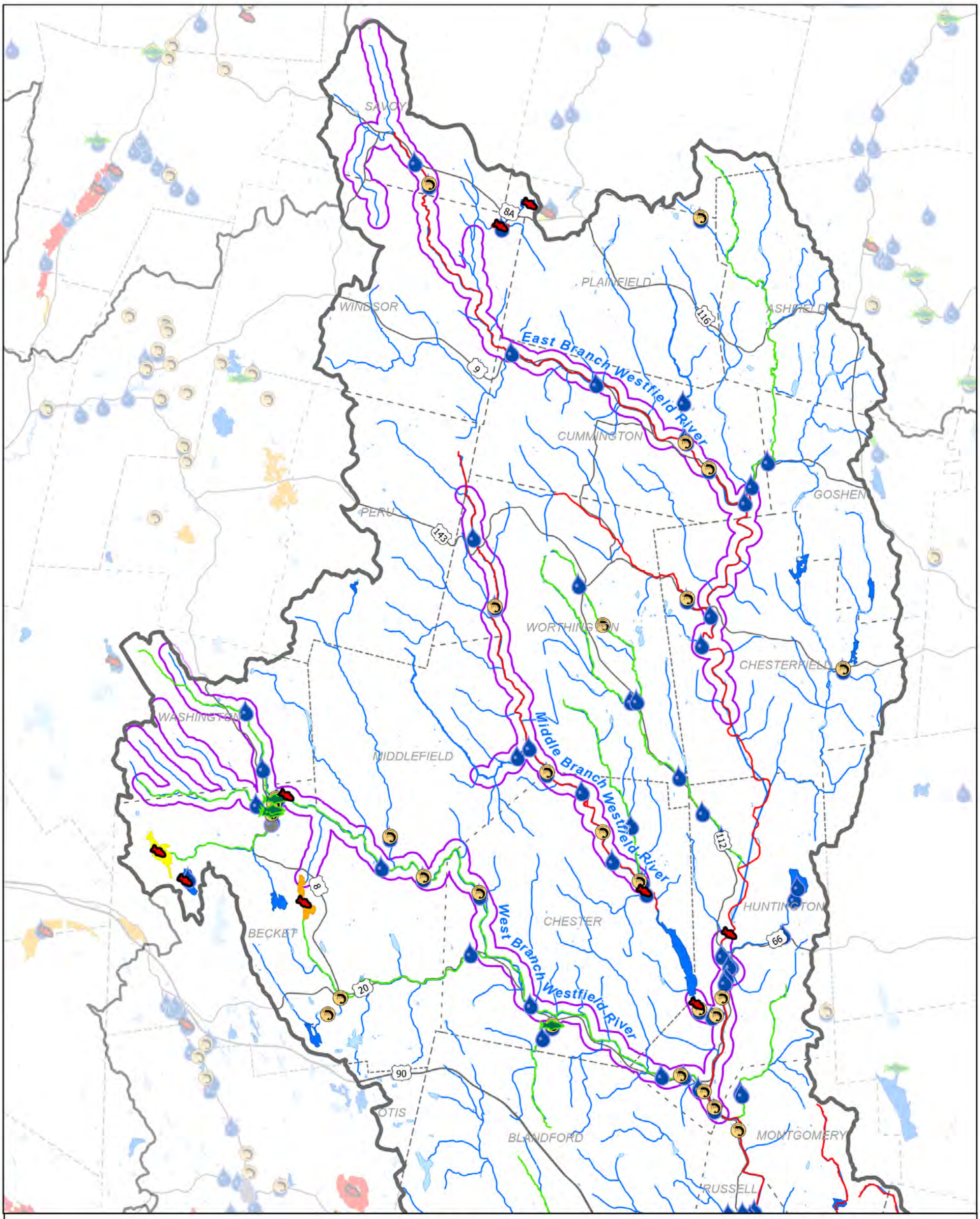
11/10/2020



Westfield Wild and Scenic River

MassDEP Monitoring Stations and 303(d)/305(b) Data

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Comprehensive Environmental Incorporated

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305(b)/303(d) Data

Streams and Waterbodies

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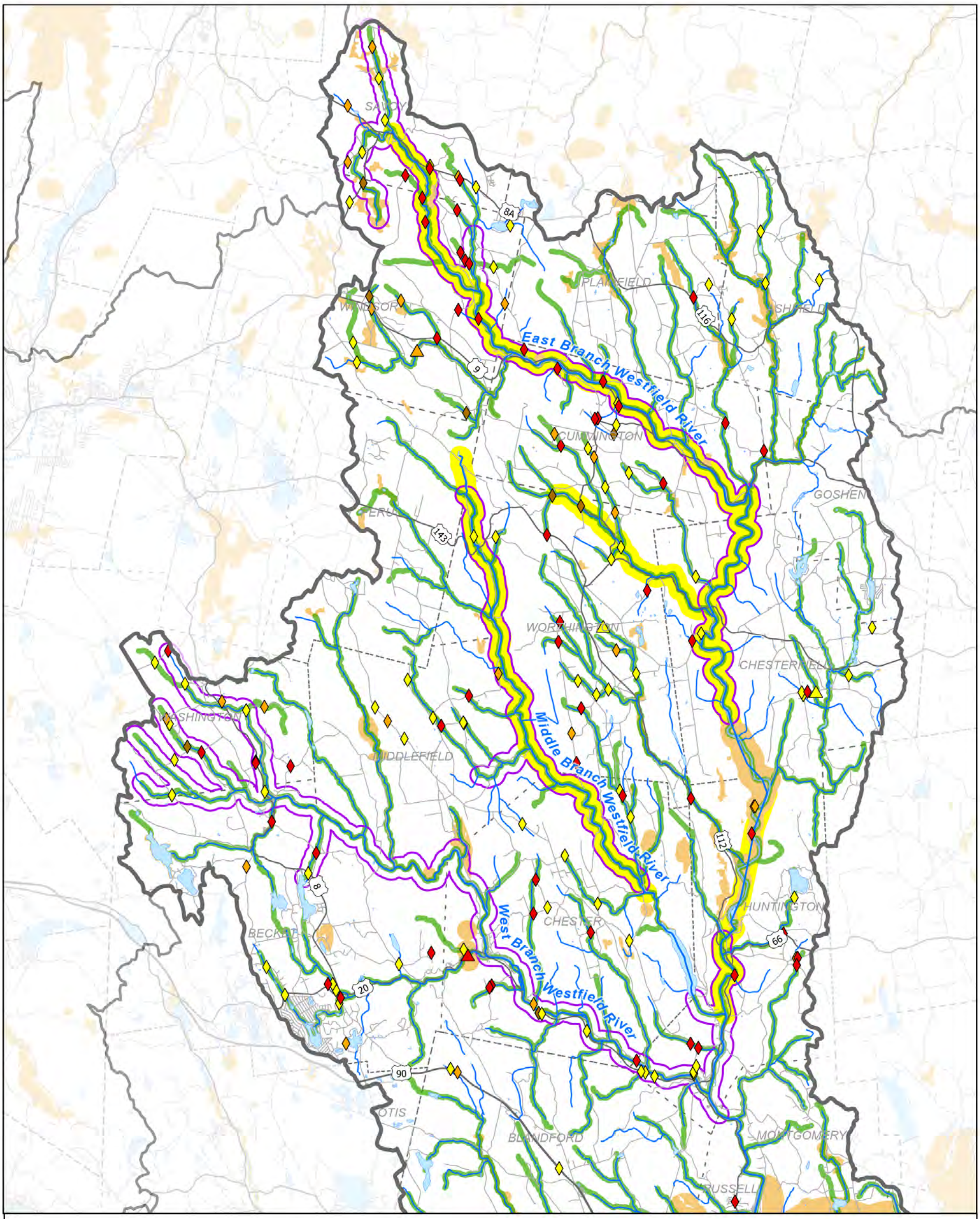
11/3/2020



Westfield Wild and Scenic River

Stream Barriers, Coldwater Fisheries and NHESP Priority and Estimated Habitats

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Comprehensive Environmental Incorporated

Data Sources: MassGIS, NAACC, CEI

- Westfield River
- Wild and Scenic River Segments
- Temperature-Impaired River Segments
- Other Rivers and Streams
- Lake, Pond, Reservoir
- Major Roads
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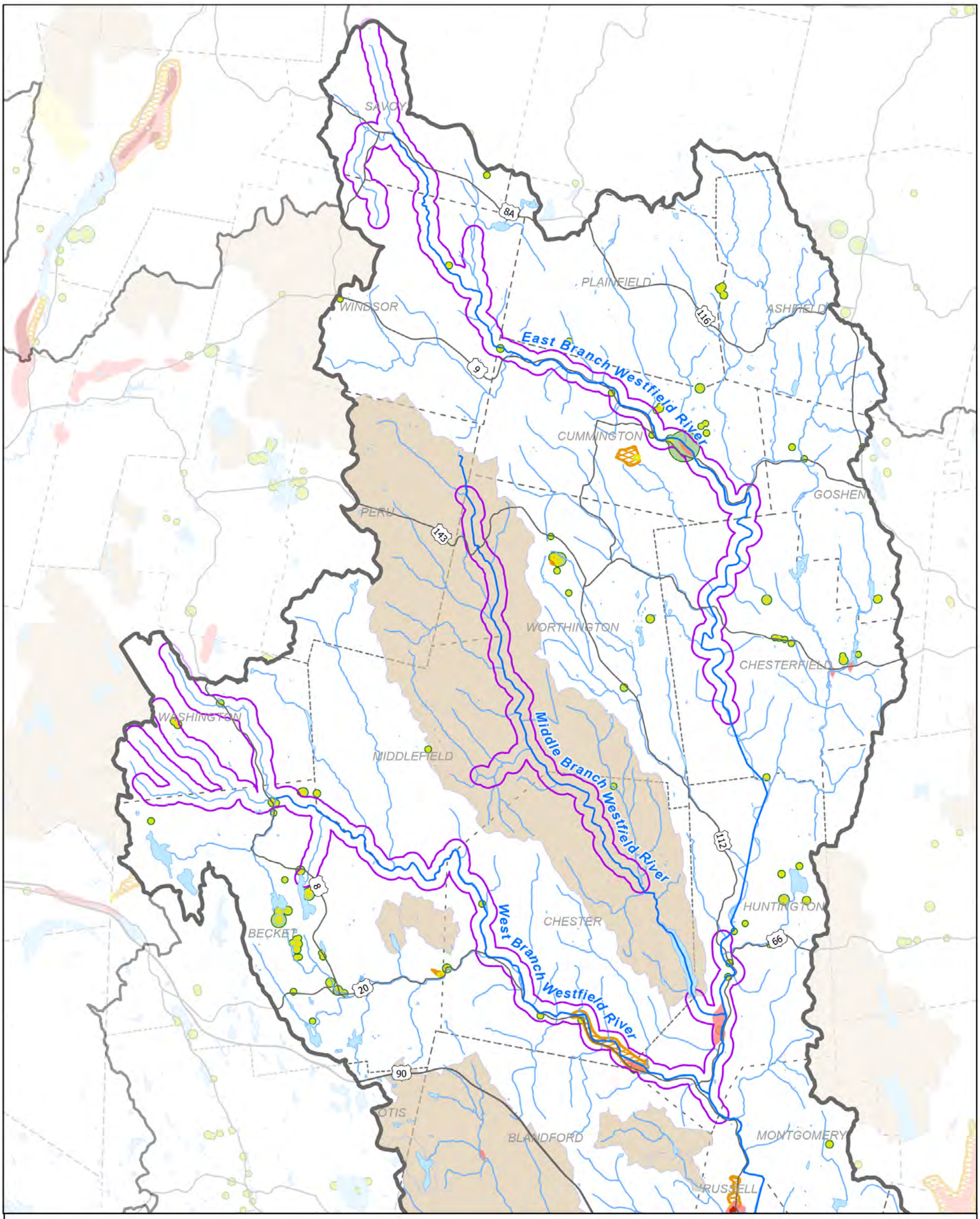
- Town Boundaries
- MA DFW Coldwater Fisheries Resources
- NHESP Priority or Estimated Habitats of Rare Species

Stream Barriers

- Bridge, Minor barrier
- Bridge, Moderate barrier
- Bridge, Severe barrier
- Culvert(s), Minor barrier
- Culvert(s), Moderate barrier
- Culvert(s), Significant barrier
- Culvert(s), Severe barrier

10/30/2020



Westfield Wild and Scenic River

Aquifers, Outstanding Resource Waters and Wellhead Protection Zones

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Comprehensive Environmental Incorporated

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- Interim Wellhead Protection Area

Aquifers

- High Yield
- Medium Yield

Outstanding Resource Waters

- Public Water Supply Watershed
- Retired Public Water Supply

10/30/2020

Stewardship Plan for the **WILD & SCENIC WESTFIELD RIVER**

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Workshop 3:

Cultural/Land Uses Working Group

November 17, 2020

Introductions

In case of Zoom problems:
edifranco@ceiengineers.com or 603-343-6311

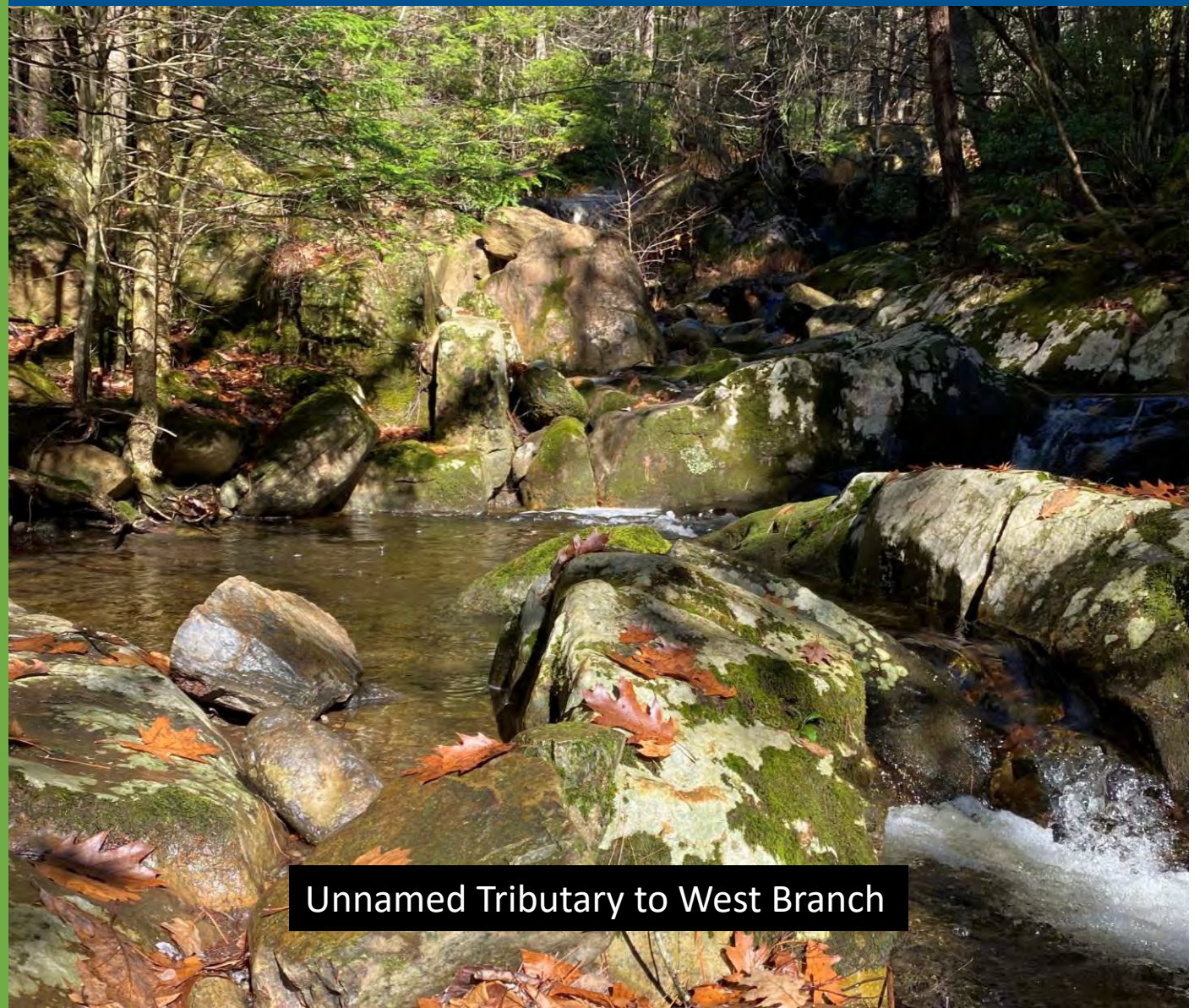
WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Stewardship Plan Goals

- **Provide a vision and strategy** to protect and enhance the water quality, ecology, historic resources, scenic qualities, and cultural resources of the Wild & Scenic Westfield River.
- **Prioritize** recommended actions
- Assess W&SWRC **management and organizational options**
- Assess **stakeholder outreach** and strategies to increase visibility and support of W&SWRC and its activities
- **Funding** options

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Workshop Topics/Schedule



Unnamed Tributary to West Branch

1. Water Resources Working Group

Thursday, November 5th, 10am -12pm

Water quality, aquatic ecology, aquatic connectivity, channel integrity, aquatic invasive species, etc.

2. Terrestrial Resources Working Group

Thursday, November 12th, 10am -12pm

Terrestrial habitat, forest integrity and connectivity, conservation areas, native communities, etc.

3. Cultural/Land Uses Working Group

Tuesday, November 17th, 7-9 pm

Recreation, cultural landscape/historic character, scenic resources, citizen education/engagement, etc.

WILD & SCENIC WESTFIELD RIVER COMMITTEE

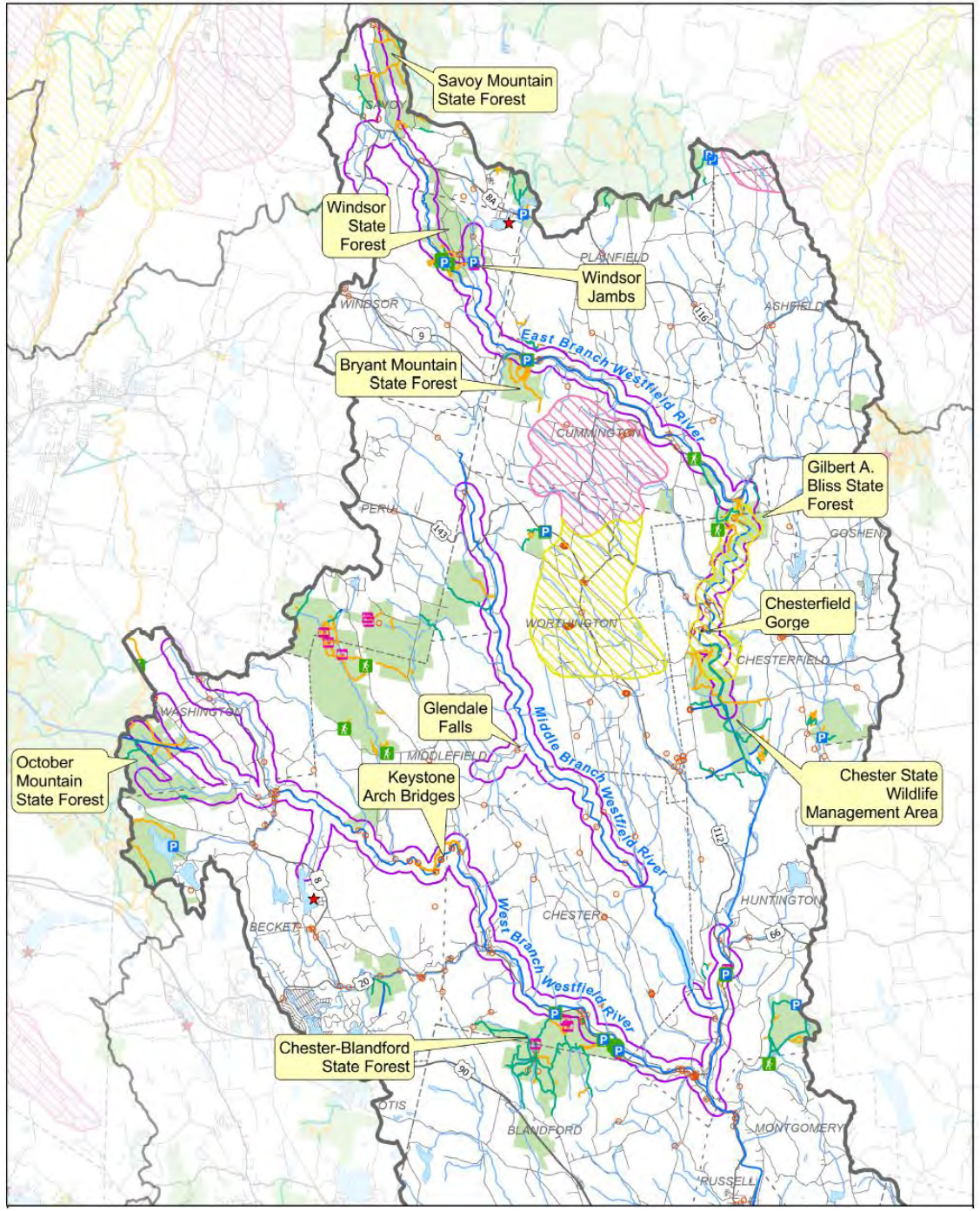
Reference Maps

West Branch-Westfield River

WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Westfield Wild and Scenic River

Cultural, Historic, and Recreational Resources



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Comprehensive Environmental Incorporated

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- Distinctive (Highest Scenic Quality)
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- Trailhead
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- Vista
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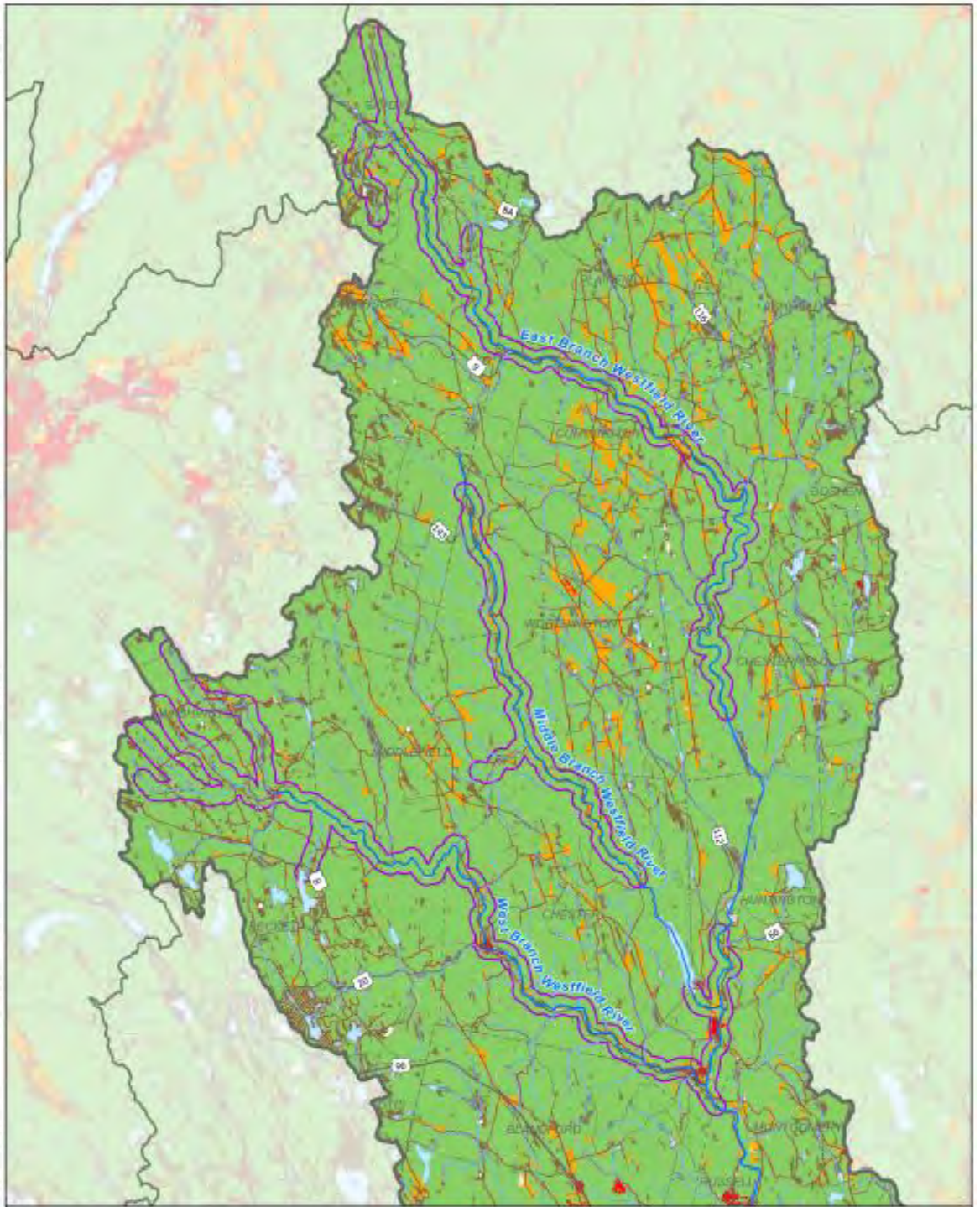
WILD & SCENIC WESTFIELD RIVER COMMITTEE

Westfield Wild and Scenic River

Land Use

Comprehensive Environmental Incorporated



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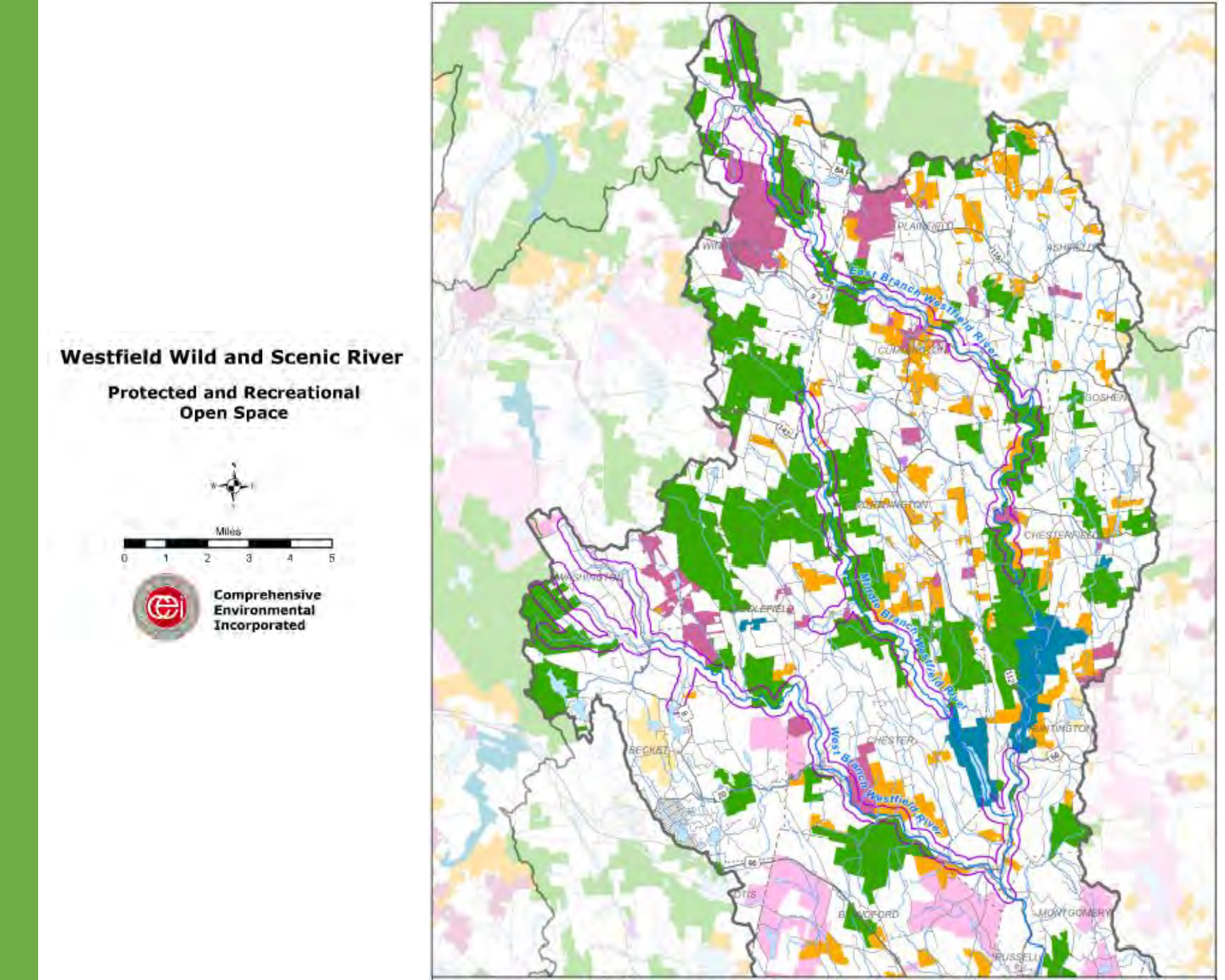
WILD & SCENIC WESTFIELD RIVER COMMITTEE

Westfield Wild and Scenic River

Protected and Recreational Open Space



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Comprehensive Environmental Incorporated

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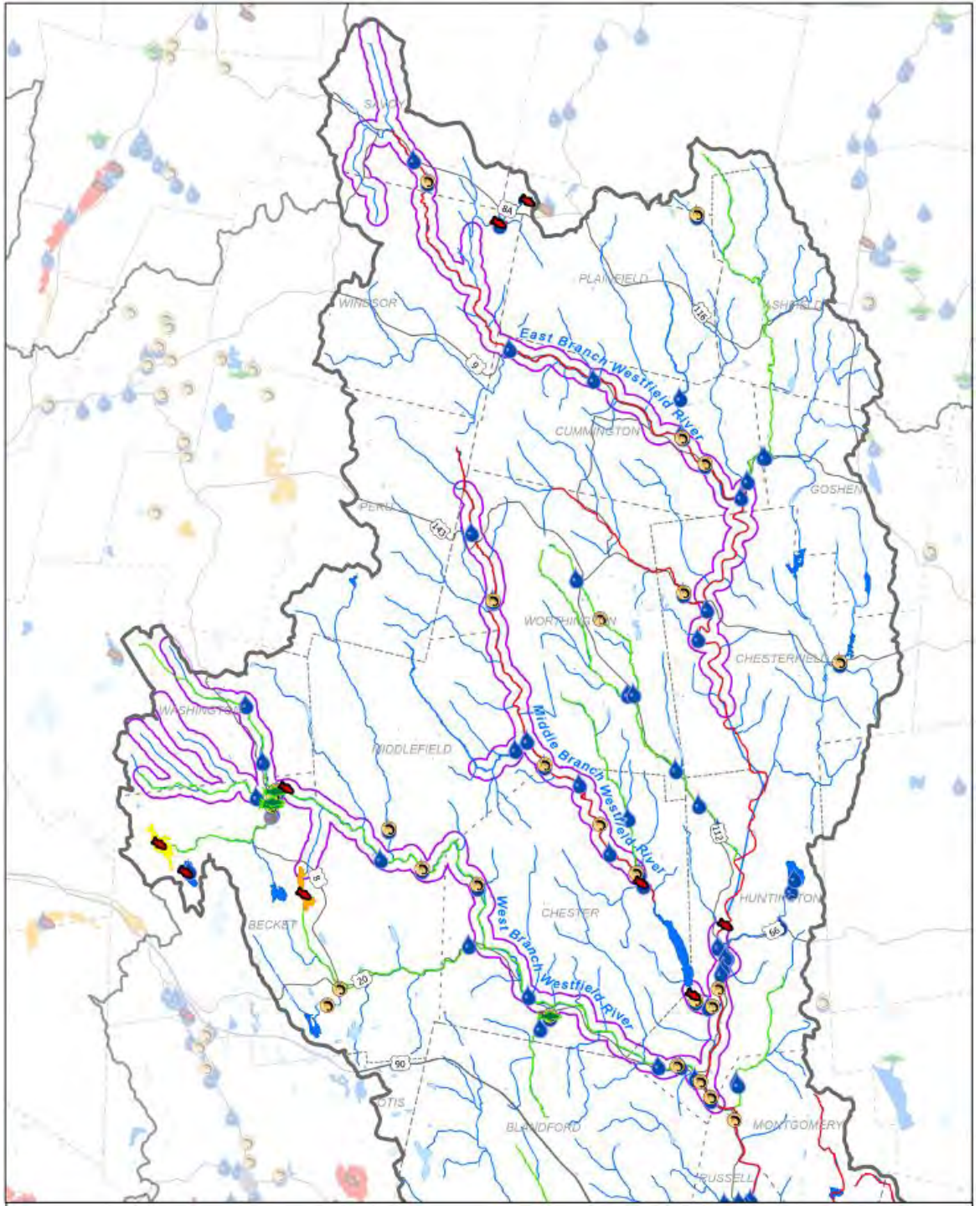
WILD & SCENIC WESTFIELD RIVER COMMITTEE

Westfield Wild and Scenic River

MassDEP Monitoring Stations and 303(d)/305(b) Data

Comprehensive Environmental Incorporated



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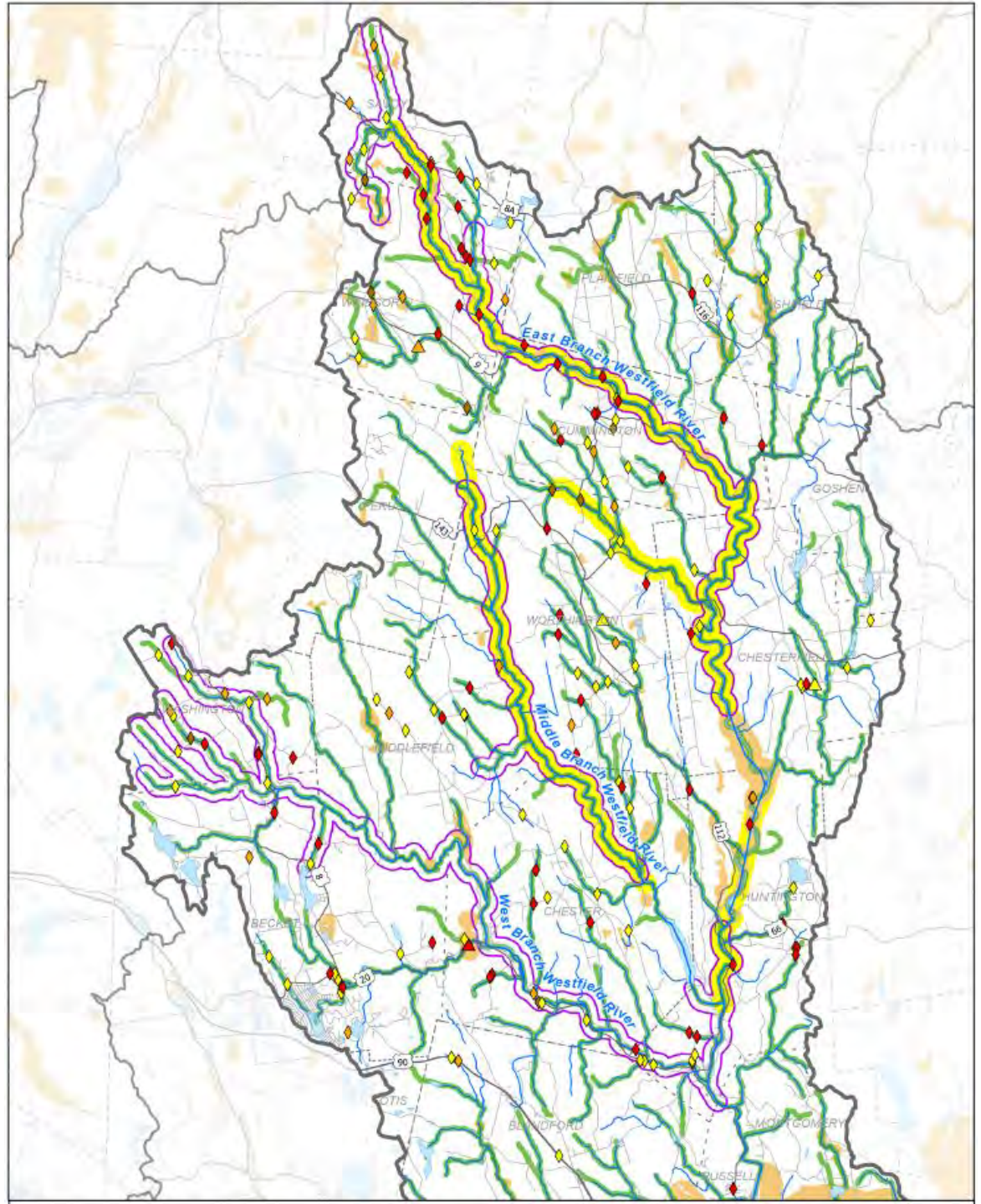
WILD & SCENIC WESTFIELD RIVER COMMITTEE

Westfield Wild and Scenic River

Stream Barriers, Coldwater Fisheries and NHESP Priority and Estimated Habitats



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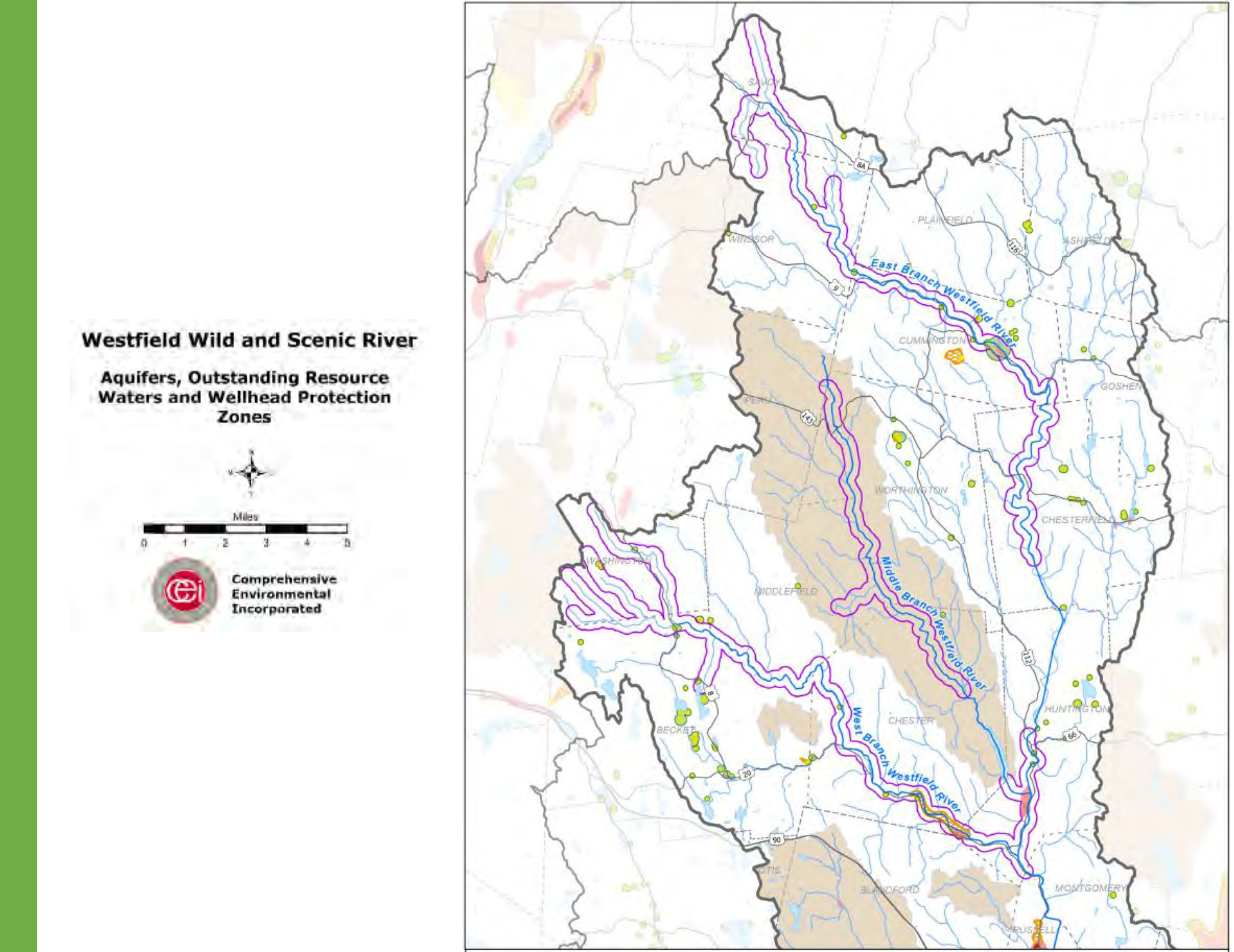
WILD & SCENIC WESTFIELD RIVER COMMITTEE

Westfield Wild and Scenic River

Aquifers, Outstanding Resource Waters and Wellhead Protection Zones



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Comprehensive Environmental Incorporated

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Aquifers

- High Yield
- Medium Yield

Outstanding Resource Waters

- Public Water Supply Watershed
- Retired Public Water Supply

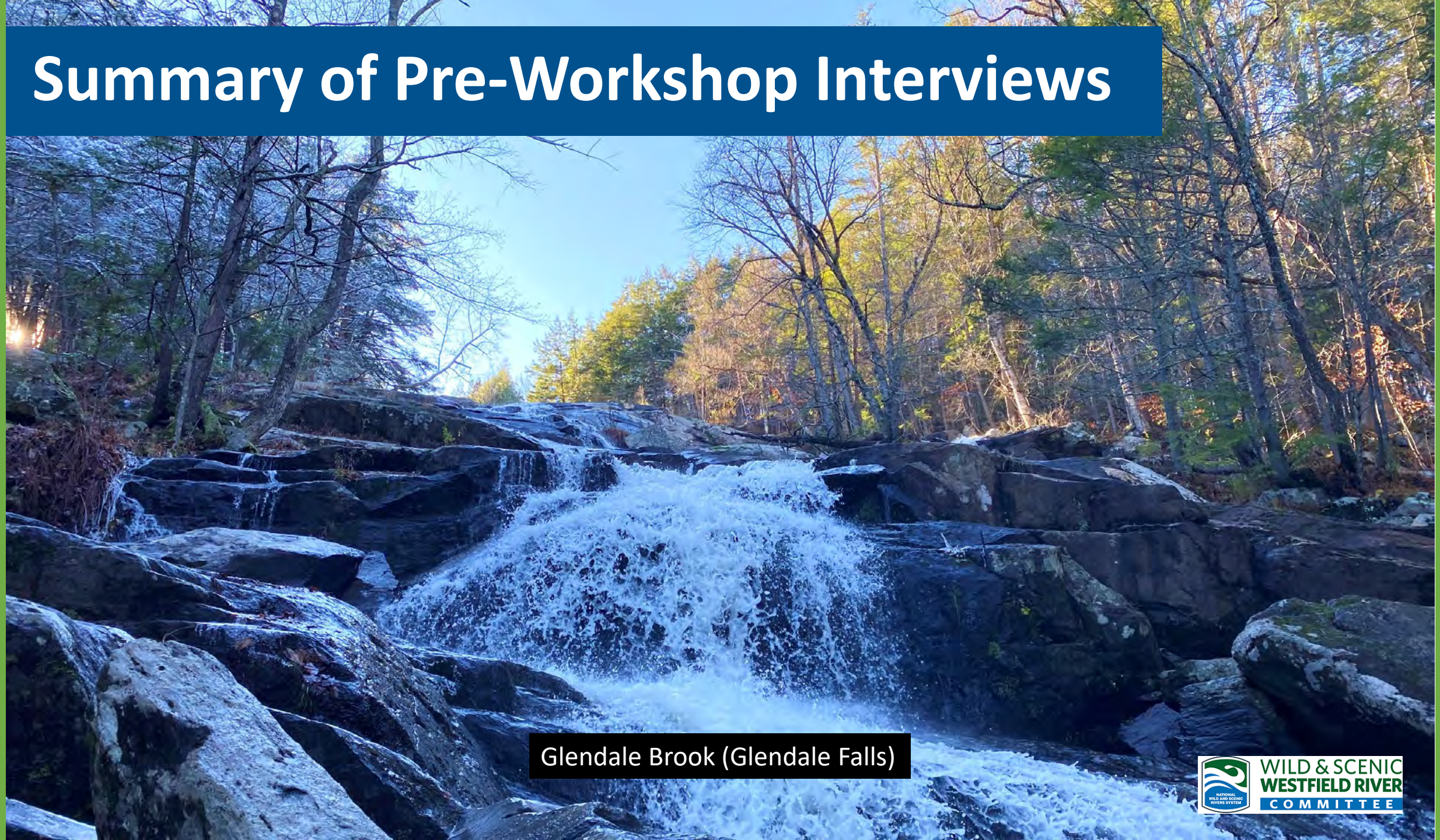
WILD & SCENIC WESTFIELD RIVER COMMITTEE

Cultural/Land Uses Working Group

– Key Topics

- Recreation
- Cultural/Historical Resources
- Education and Engagement
- Other

Summary of Pre-Workshop Interviews



Glendale Brook (Glendale Falls)

WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Pre-Workshop Interviews – Cultural/Land Uses

Major Themes of Interview Feedback

- **Recreation impacts:** *hikers, ATVs, parking at trailheads*
- **Loss of historic character of watershed:** *new development, private ownership of cultural resources*
- **Need for education:** *public education programs, Wild and Scenic coordinator*

Recreation

Chesterfield Gorge

WILD & SCENIC WESTFIELD RIVER COMMITTEE

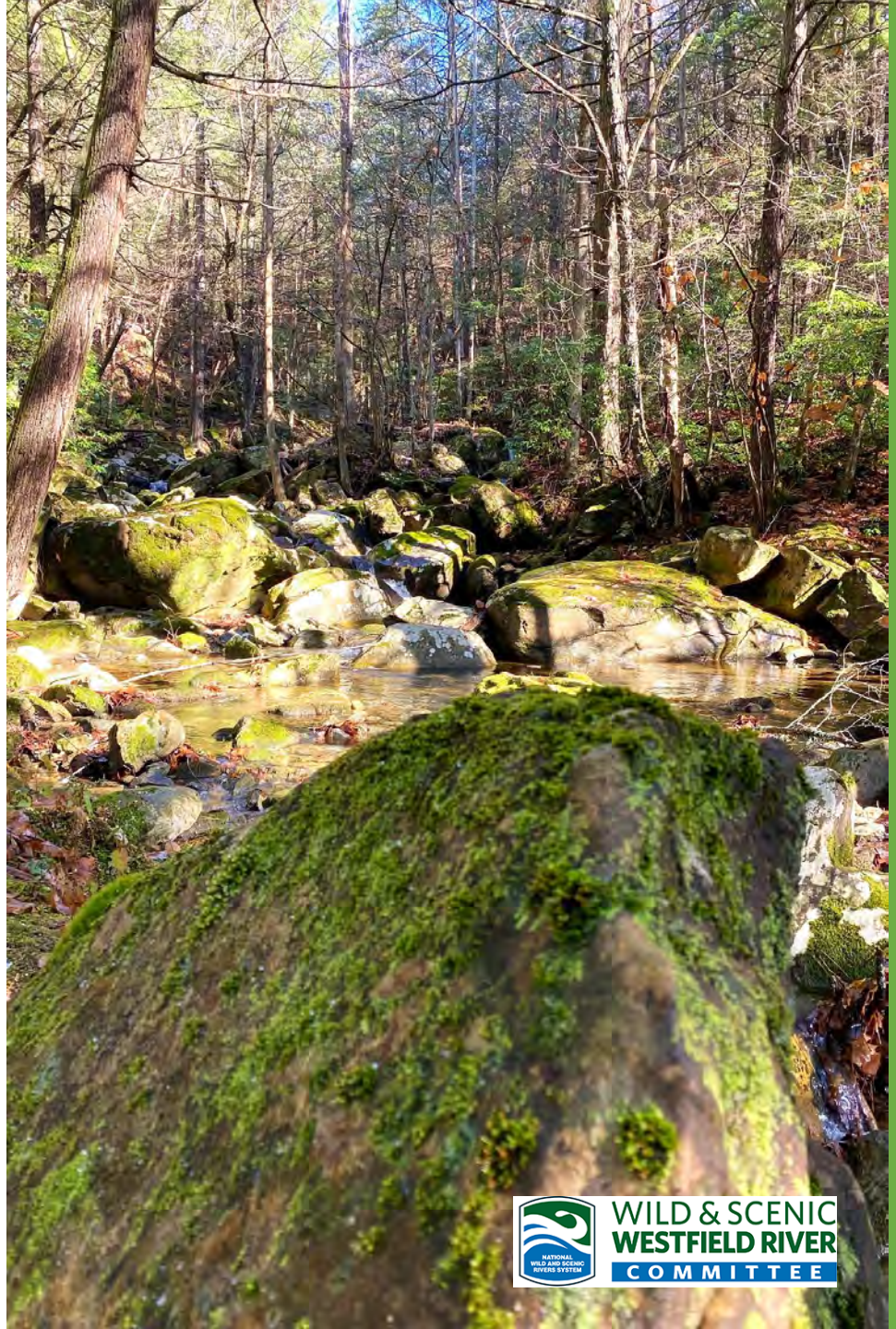
Pre-Workshop Interviews Recreation

"The river has become extremely heavily used for recreation particularly along the East Branch Trail. This is due to easy vehicle access to remove river sections. As a result, I have noticed new trails created, trash, and overall degradation."

Pre-workshop Survey Response

"Recreation access is hampered by myriad State and private agencies managing properties with individual mandates rather than a comprehensive planning strategy."

Pre-workshop Survey Response



Cultural/Historical Resources

Keystone Arch Bridge

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Pre-Workshop Interviews

Cultural/Historical Resources

"Incremental loss of historic buildings is eroding scenic and historic character of sites and villages."

Pre-workshop Survey Response

"The Keystone Arch Bridges could be such a draw and are of such historical significance, but their access is impeded by CSX's lack of participation in their restoration and preservation ."

Pre-workshop Survey Response

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Education/Engagement

WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Pre-Workshop Interviews

Education/Engagement

"It is important to continue making the community proud of their history and invested in the sharing of it."

Pre-workshop Survey Response

"People have a hard time "doing the right thing" with respect to land management because they can't afford to – trash/junk in the yard, property management, invasive species management."

Pre-workshop Survey Response

"Increased partnerships with cultural stewardship agencies , historical commissions and societies, and municipal staff are necessary."

Pre-workshop Survey Response

WILD & SCENIC WESTFIELD RIVER COMMITTEE

Group Exercise:

1: Identify Vulnerabilities and Strengths for each category

2: Identify and Prioritize Actions

3: Determine the Overall Priority Actions

WILD & SCENIC
WESTFIELD RIVER
COMMITTEE

Thank you for your time!

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