

BERKSHIRE REGIONAL PLANNING COMMISSION
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WORK SESSION MEETING NOTICE

A work session meeting of the Berkshire Regional Planning Commission
will be held on:

Thursday, January 9, 2014 starting at **5:30 p.m.**

Berkshire Regional Planning Commission Offices
Pittsfield, Massachusetts

Meeting Material: All written materials for the meeting are posted on BRPC's website:
www.berkshireplanning.org. Click on the calendar date for the meeting and materials available
will be listed.

Please Note: *In the case of inclement weather on the day of the meeting, please call BRPC (413-442-1521, ext 15) to confirm if the meeting will still be held.*

Wraps and other light food will be available for Commission members and staff participating in the workshop.

AGENDA

- I. **Opening** **(5:30-5:35)**
- A. Call to Order
- B. Introductions/Roll Call
- II. **Review of First Four Draft Elements of the Sustainable Berkshires Plan** **(5:35-7:30)**

As discussed at the last Commission meeting, we will hold at least two work sessions on the elements of the Sustainable Berkshires plan in order to be prepared for consideration at the Commission's March 20th meeting. At this first work session, presentation and discussion will focus on the four elements that have been completely drafted to-date:

- *Historic Preservation*
- *Conservation & Recreation*
- *Climate Change & Energy*
- *Local Food & Agriculture*

We will send out executive summaries of these four elements several days prior to the work session. For a more complete overview and detailed information on Sustainable Berkshires, go to www.SustainableBerkshires.com.

A second work session on the remaining four elements is scheduled for Thursday, February 6th, also at 5:30 p.m. Please put this on your calendar.

(Over)

III. Adjournment

(7:30)

Other interested citizens and officials are invited to attend.

City and Town Clerks: Please post this notice pursuant to M.G.L. Chapter 39, Section 23B

Regional Goals, Policies and Strategies

GOAL HP 1.1: Identify and protect priority assets in the region with a focus on quality and diversity.

Policy 1.1.1: Coordinate historic preservation priorities within and across municipal lines.

Policy 1.1.2: Develop and use a single regional framework for historic asset preservation in the Berkshires.

GOAL HP 1.2: Maintain and expand historic resource inventories.

Policy 1.2.1: Strive to employ a 30-year age maximum for surveys.

Policy 1.2.2: Work to identify gaps in surveyed resources and develop strategies to address them.

Policy 1.2.3: Pursue National Register listing for eligible surveyed sites and districts.

GOAL HP 2.1: Collaborate to improve visibility of preservation in the region.

Policy 2.1.1: Foster and sustain media presence on historic assets and their multiple benefits to the region.

Policy 2.1.2: Improve participation and representation in state preservation plans and events.

GOAL HP 2.2: Foster local awareness, pride, and year-round use of cultural historic assets.

Policy 2.2.1: Work to expand local resident use of cultural historic sites.

Policy 2.2.2: Strive to make sites relevant to the larger community in more than one way.

Policy 2.2.3: Encourage increased school use for learners of all ages.

GOAL HP 2.3: Build municipal awareness of preservation benefits, practices, and challenges.

Policy 2.3.1: Provide opportunities for local municipal officials, boards and departments to stay updated on historic preservation materials and practices.

GOAL HP 3.1: Build regional capacity to offer complete spectrum of historic preservation services and functions.

Policy 3.1.1: Explore new or expanded organizations to fulfill all aspects of preservation work.

Policy 3.1.2: Build capacity of local historical commissions and local history organizations to effectively fulfill their missions.

GOAL HP 4.1: Increase the level of protection for historic assets in the region.

Policy 4.1.1: Build support for local preservation regulations.

GOAL HP 4.2: Ensure historic preservation objectives are well supported by financial tools and incentives

Policy 4.2.1: Improve access to historic rehabilitation tax credits for commercial projects.

Policy 4.2.2: Develop incentives and technical assistance for homeowners.

GOAL HP 5.1: Link historic activities as a partner to economic development efforts.

Policy 5.1.1: Work to promote historic tourism in the region.

Policy 5.1.2: Promote and enhance the value of historic preservation to downtowns.

GOAL HP 5.2: Collaborate to support local food and agriculture.

Policy 5.2.1: Support local food production through historic property use or reuse.

GOAL HP 5.3: Use historic preservation as a tool to help define and improve neighborhoods.

Policy 5.3.1: Explore ways to highlight, redefine and protect historic neighborhoods, particularly in downtown or disadvantaged areas.

Policy 5.3.2: Work to balance public health and historic preservation aims.

GOAL 5.4: Work to advance historically sensitive green building and renewable energy improvements.

Policy 5.4.1: Support homeowners of historic properties to make cost-efficient home improvements.

Policy 5.4.2: Coordinate with green building and energy efficiency professionals on appropriate approaches for historic properties.

Historic Preservation



Key Trends

Historic Resources

Historic Surveys

Most of our communities had baseline historic survey work completed in the 1980's. At present, much of that information needs updating and additional historic resources need to be surveyed. The Massachusetts Historical Commission has identified this as a need in every Berkshire community.

Local Historical Commissions

Only eighteen of the thirty-two municipalities in Berkshire County have *active* local historical commissions. Outreach, education and support should be directed toward local leadership, LHC members and the general public to demonstrate the important role this body can serve in a community.

Municipal Protections

Very few communities have the Massachusetts Historical Commission's minimal recommended historic resource protections in place, such as demolition delay.

Regional Coordination

Efforts are underway to consider our historic resources in a broader, regional way, with work of Housatonic Heritage, a notable player working to advance these efforts. Their work grouping heritage assets into themes has brought attention to lesser-known sites and offers a means to enhance the participant's experience. Housatonic Heritage is in the process of finalizing and seeking approval for a required management plan.

State Preservation Plan

The Massachusetts Historic Commission prepares a state plan for historic preservation every five years; currently they are using the 2011-2015 plan. There weren't representatives from Berkshire County actively participating in the production of this plan. In future plans, the Berkshire Regional Planning Commission, Housatonic Heritage and other regional interests as well as local communities should take an active role in its development.

Historic Context

Historic assets of the Berkshires reflect its past in the present day. This includes everything from Native American history of the Mohicans to the more recent past. Historic contexts are categories of time, architectural eras, or events that help tell the story of sites and structures. A useful framework for understanding different eras of this history include:

- **The Mountains and Woodlands (Pre-History to 1725):** This era includes all of the First Nations' history prior to colonization.
- **Settling the Woodlands and Leveraging Their Resources (1725-1770):** This era includes early colonization, missionary work, iron, timber and other extractive industries, and the French and Indian War.
- **The American Revolution and Early Federal Period (1770-1800):** This era includes people and places within the county that played a role in the Declaration of Independence and American Revolution as well as some early African American and civil rights history.
- **Achievement and Advancement (1800-1840):** This era includes the beginning hydro-powered industrial activities such as paper mills that began to pepper the Housatonic River and some tributaries as well as the literary and artistic works that began to emerge from the region.
- **A United Region in a Divided Nation (1840-1870):** This era includes the Civil War and related Underground Railroad activities and writings across the region.
- **The Gilded Age (1870-1905):** The era includes the time when successful writers began to build retreat cottages in the Berkshires. This was also a time when noted industrialists constructed early mansions across the region.
- **Nature, Culture, and Harmony (1900-Present):** This era covers the past century, which is itself arguably several eras combined. Because of the long history of the region, preservation focus has tended to be placed on resources over one hundred years of age. Fifty years of age is often when consideration as an historic resource begins.

The Preservation Process

SURVEY	LIST	PROTECT
Examine and document historic resources to guide future preservation activities.	Formally list significant historic resources on federal, state, and/or local lists.	Enact measures (zoning, structural improvements, advocacy) to encourage long-term preservation.

SURVEY

The first step in a community's preservation planning process is to identify and survey buildings, structures, objects, areas, burial grounds, landscape features, and sites that are of historical, architectural, or archaeological importance. This inventory serves as the foundation for future preservation planning and preservation activities.

LIST

The National Register of Historic Places

The National Register of Historic Places (National Register) is a listing of historic properties and districts across the United States that exhibit historic significance. This list is maintained by the National Park Service, which has final approval of nomination forms submitted through the State Historic Preservation Office. The National Register contains 173 historic resources (buildings, sites, districts, structures and objects) from the Berkshires. This includes 36 national historic districts within the Berkshire's 32 municipalities.

National Historic Landmarks

Designation as a National Historic Landmark is a rare recognition (185 in Massachusetts and fewer than 2,500 nationwide) reserved for sites that possess exceptional value or quality in illustrating or interpreting the heritage of the United States. These landmarks may be owned by private individuals, local and state governments, tribal entities, non-profit organizations, or corporations. There are grant programs which prioritize funding for these sites (i.e. the former Save America's Treasures program); federally-funded development projects affecting them are subject to review; and each year there are a small number of landmarks which may participate in an inspection and condition analysis process. National Landmarks also have additional educational and outreach opportunities available to them through the National Park Service.

- There are nine National Historic Landmarks in the Berkshires:
- Arrowhead, Herman Melville House, Pittsfield
- Crane and Company Old Stone Mill Rag Room, Dalton
- W.E.B. DuBois, Boyhood Homesite, Great Barrington
- Daniel Chester French, Home and Studio, Stockbridge
- Hancock Shaker Village, Pittsfield
- Jacob's Pillow Dance Festival, Becket
- Mission House, Stockbridge
- The Mount, Edith Wharton Estate, Lenox
- Naumkeag, Stockbridge

Hancock Shaker Village is a National Historic Landmark which has succeeded in remaining a relevant site with a mix of youth programming and a focus on sustainable living.

Preservation Partners

National

- **Department of the Interior's National Park Service** maintains the National Register of Historic Places.
- The **National Trust for Historic Preservation** is a national non-profit devoted to promoting historic preservation practice in the country through education, research, awareness-raising, and capacity-building activities.

State

- The State Historic Preservation Office is the **Massachusetts Historical Commission**. They maintain a list of the state's historic and cultural resources and review designation forms.
- **Preservation Massachusetts** is a statewide non-profit historic preservation organization that provides the services of a circuit rider, to provide communities with technical assistance and troubleshooting with project development.

Regional

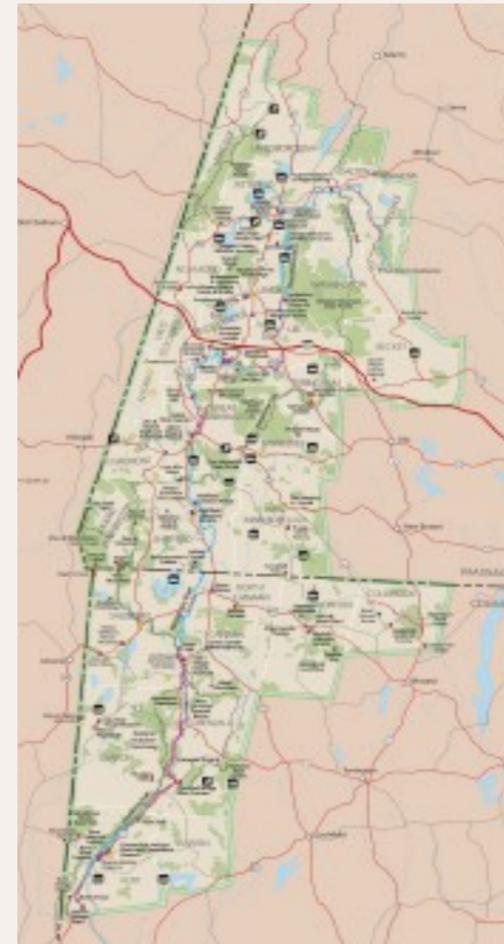
- The **Berkshire Historical Society** is a regional non-profit dedicated to collecting, preserving, and disseminating the history of Berkshire County in western Massachusetts.
- The **Local History Collection** in the Berkshire Athenaeum is the creation and preservation of a permanent record of important events, groups and personalities of the City of Pittsfield, which may be recorded in materials of a regional focus.
- **Housatonic Heritage** is the not-for-profit entity established to undertake and help catalyze historic preservation activities to highlight and preserve the history of the Upper Housatonic Valley National Heritage Area. They provide small grants, technical support and general education for organizations and individuals.
- The **Trustees of Reservations** is a private, not-for-profit, statewide organization aimed at preserving properties of exceptional scenic, historic, and ecological value in Massachusetts for public use and enjoyment. Four of the ten historic homes owned and operated by the Trustees are located in the Berkshires: Ashley House, Sheffield, MA; The Folly at Field Farm, Williamstown; The Mission House, Stockbridge; and Naumkeag, Stockbridge. Other notable Trustees sites with historic, cultural and/or natural value in Berkshire County include: Bartholomew's Cobble, Sheffield; Dry Hill, New Marlborough; Field Farm, Williamstown; Monument Mountain, Great Barrington; Mountain Meadow Preserve, Williamstown; Notchview, Windsor; Questing, New Marlborough; and Tyringham Cobble, Tyringham.

Local

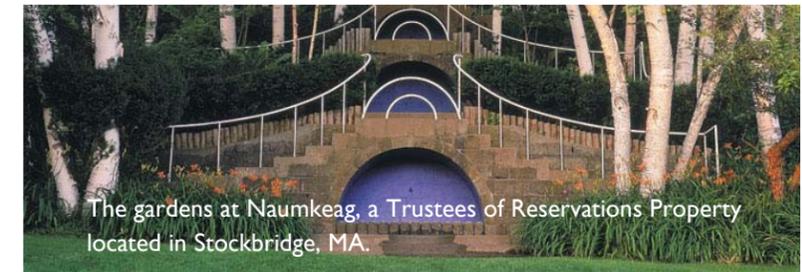
- There are numerous historical societies and history organizations throughout the county, some representing a town or city, and others which are based at a particular site. Many of the local historical commissions and societies having overlapping geographic interests coordinate their efforts and some have members in common. In Berkshire County all but two communities have established a local historical commission; however, only eighteen (18) are fully active.

Upper Housatonic Valley

National Heritage Area



National Heritage Areas are designated by Congress as places where natural, cultural, and historic resources combine to form a cohesive landscape of national significance. The Upper Housatonic Valley National Heritage Area was established in 2006 and is managed by Housatonic Heritage, a not-for-profit entity established for that purpose. The area covers 29 communities in northwest Connecticut and southwestern Massachusetts. Designation carries with it a certain amount of federal funding to support projects that are in line with historic preservation priorities established in the management plan for the National Heritage Area.



Heritage Landscapes

There are two basic categories of heritage landscapes currently designated within the region:

Historic Landscapes in State Lands: The state Department of Conservation and Recreation notes a short list of important heritage landscapes across the state. Those within the Berkshires, listed by type, include:

- Bash Bish Falls State Park (Scenic Landscape)
- Mount Greylock State Reservation (Scenic Landscape)
- Natural Bridge State Park (Former Industrial Landscape)
- Pittsfield State Forest (Civilian Conservation Corps Project)
- Ashuwillticook Rail Trail (Rail Trails)
- Appalachian Trail (Uncategorized)

Historic Landscapes of Great Estates: A number of the great estates in the Berkshires have contributing lands that are also protected by preservation restrictions or zoning as part of the site or district. Examples of this type of resource include the lands of Shadowbrook (currently Kriplau Center for Yoga and Health), the land and gardens of Naumkeag, and the grounds of Jacob's Pillow Dance Festival.

PROTECT

Zoning and Other Protections

There are numerous ways to protect historic assets in a community, from a specific building to the overall community context.

Demolition Delay: Demolition delay bylaws are locally-adopted bylaws that delay the demolition of historically significant buildings (for example, listed on the National Register, eligible for listing, or of a certain age) in the hopes of finding an alternative to demolition. Property owners requesting a demolition permit through the building department must first receive approval from the Historical Commission. If the Historical Commission determines that the building is "preferably preserved," a delay period is imposed, usually 6 to 12 months to allow time to explore alternatives to demolition. However, at the end of the delay period, demolition can still occur. Five Berkshire communities currently have demolition delay bylaws with varying delay periods: Becket (6 mos.), Pittsfield (6 mos.), Stockbridge (12 mos.), Tyringham (12 mos.) and Williamstown (90 days).

Local Historic District (LHD): Vastly different from a national historic district, an LHD can be one of the strongest protective regulatory tools, regulating what is visible from the public right-of-way for groups of buildings or sites in that district. In Berkshire County there are local historic districts in only three towns – Lenox, Great Barrington and Sheffield – while there are over 200 in Massachusetts.

Other protections: There are numerous other zoning protections which protect historic resources in some manner such as scenic road bylaws, village center zoning, and adaptive reuse overlay districts. Preservation restrictions on specific properties can also ensure that the historic integrity of a building is maintained in perpetuity.



Key Trends

Habitat

- Berkshire County hosts some of the largest blocks of contiguous forest land in Massachusetts, with large expanses that stretch into neighboring counties and states.
- The Housatonic River watershed hosts 110 plant species and 51 animal species protected by the Mass. Endangered Species Act.
- 5% of Berkshire County is mapped as being open water, streams, rivers or wetlands.
- Aquatic habitats and their surrounding riparian areas are some of our most biologically productive areas. Yet only 13% of the Housatonic River's riparian area and 17% of the Hoosic River's are protected.

Biodiversity Challenges

- Direct habitat loss and fragmentation is the greatest threat to land-based habitats.
- Residential homes constitute almost 80% of new development across the state and is the most prevalent type of development in the Berkshires, replacing field and forest. 2,500 acres of natural land were developed in the county between 1991 and 2005—even as the population declined.
- The average American home grew from 983 square feet in 1950 to 2,700 square feet in 2006 while the average household size decreased 24% in the same timeframe.
- Nonpoint source pollution, largely from surface runoff, is the single greatest source of pollution to our waterways.

Our Natural Landscape

Berkshire County and its surrounding regions are fortunate in that they are rural and largely undeveloped. Seventy-five percent of the county is blanketed in forest, providing a lush green landscape that is rich in natural, scenic and recreational qualities. Our Housatonic and Hoosic Rivers, our most densely developed corridors, nonetheless support rare species along most of their lengths as they flow through and out of the county.

Important Natural Areas - What are they?

Important and uncommon habitats that have been identified and mapped in the Berkshires include:

- **Large blocks of unfragmented forest:** important in one of the most densely developed states in the U.S; needed for interior-forest-dwelling species and wide-ranging animals like moose, bear and bobcat; hosts microhabitats for diversity.
- **Waterway and wetland buffers:** the water / land transition zone is the most highly productive inland ecosystem, serving both aquatic and terrestrial species.
- **Calcareous wetlands:** globally uncommon alkaline wetlands; some of the best examples in New England are here.
- **Vernal pools:** breeding pools of forest-dwelling rare amphibians and invertebrates; important as 1/3 of the state's amphibians are listed as Species of Special Concern.
- **Spruce/fir forests:** cooler species typical of more northern climates and located here on higher ridgetops.
- **Coldwater fisheries:** sensitive freshwater habitats; last bastion for native brook trout and similar creatures that rely on cold, highly oxygenated waters.
- **Areas of Critical Environmental Concerns (ACECs):**
 - Hinsdale Flats
 - Kampoosa Bog
 - Karner Brook
 - Schenob Brook
 - Upper Housatonic River

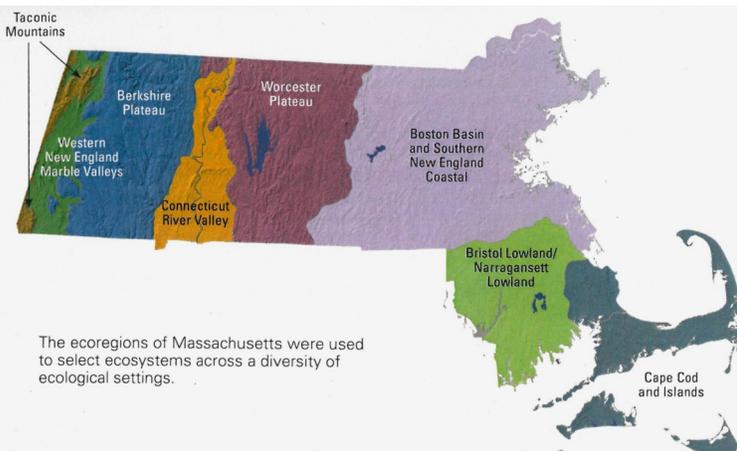


Kampoosa Bog , Stockbridge MA

Ecological Landscape

Berkshire Bioregions

- Western New England Marble Valley:** calcium in the marble and lime bedrock buffers the acidity of the water and soil, providing an uncommon acid-neutral environment unique in the state to the Berkshires. This ecoregion supports 125 state-listed rare species, the second highest number within a single ecoregion of the state, despite being one of the smallest in area size. Shown below in green.
- Taconic Mountains:** geologically related to the Mt. Greylock range. Streams are high gradient and lakes and ponds are rare. Vegetation is generally northern hardwoods with some spruce-fir at higher elevations. Hosts 44 stated listed rare species. Shown below in brown.
- Berkshire Plateau:** includes the Hoosac Range on our northeastern border and the Berkshire Hills of our central and lower eastern border, and is generally comprised of northern hardwoods, with spruce-fir forests in the higher elevations. Lakes and ponds dot the landscape. Hosts 53 state-listed species. Shown below in blue.



Sensitive Habitats

BioMap2 is a mapping effort that represents some of the most important natural resource areas and rare species habitats across the state. These areas are shown on a Natural Resources map that has been developed to accompany this publication.

Core Habitat: areas critical for the long-term survival of rare species and other Species of Conservation Concern. Protecting the ecological function of these habitats will help us conserve a biodiverse world for the next generation. These areas cover approximately 19% of the county and are shown in dark green on the map. 54% of these areas are permanently protected from development.

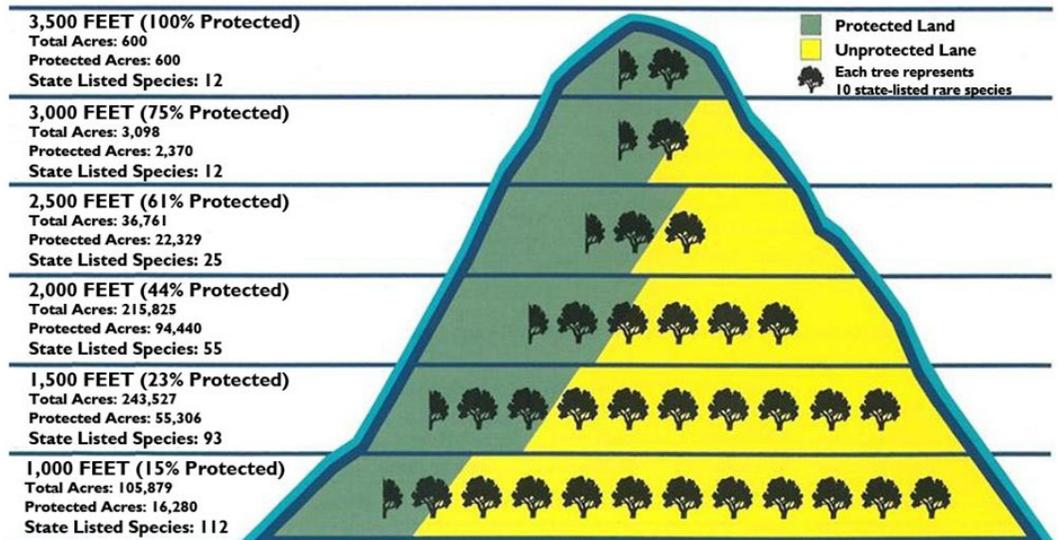
Critical Natural Landscape: large natural landscape blocks that typically surround Core Habitats and have been minimally impacted by development. These areas provide additional habitat acreage, travel corridors between habitats, help filter invasive species incursion and improve the overall resilience of a habitat to climate change impacts. These areas cover approximately 43% of the county land and are shown in yellow. 45% of these lands are protected from development.

Waters of the Berkshires: Despite being impaired by pollution, the Housatonic and Hoosic Rivers and their tributaries support a vast array of rare species. Many species of wildlife require both aquatic and terrestrial habitats to complete their life cycles; many amphibians live on land but require water for reproduction, while some turtles spend most their time in the water but need land for egg laying.

Rare Species Protection in Berkshire County (1998)

The greatest numbers of rare species in the county are found in our lowlands 1,000 feet in elevation or lower, yet only 15% of these lands are protected from development.

Inversely, the greatest proportion of conservation lands are found in our highlands 2,500 feet or higher, which supports a relatively few number of rare species.



Identifying Vulnerable Habitats

Conservation Assessment and Prioritization System (CAPS)

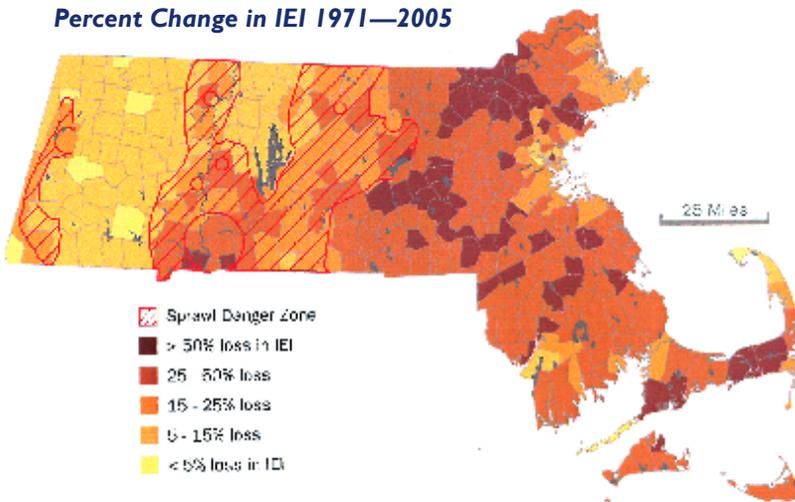
CAPS is a mapping analysis tool that located the most intact and least fragmented forests, wetlands and landscapes. Ecological threats such as development, roads, dams, pollution and intensive agriculture were added to quantify habitat degradation. The analysis identified areas with a high Index of Ecological Integrity (IEI). These areas are shown on the CAPS map that has been developed to accompany this publication.

According to *Losing Ground*, a 2009 Mass. Audubon report, the IEI of the Berkshires has declined approximately 15% during a 34-year period, largely due to development and road building.

The IEI declined more sharply in a few key communities, similar to the Sprawl Danger Zone more often seen to our east (red hatched areas on the map below). In the county, this zone includes the southwest/central towns of Sheffield, Egremont, Alford, West Stockbridge, Richmond, Pittsfield and Lanesborough.

The acreage impacted by development includes not only land directly lost to buildings and yards. The Mass. Audubon study also noted that for every one acre of new development in the county, another 5 acres suffered “hidden” development, including road building, fragmentation, and the effects of runoff, invasive species and pets. For the approximately 6,640 acres of development, the ecological integrity of another 33,680 acres were diminished.

Percent Change in IEI 1971—2005



Natural Resources Maps

BRPC has created a series of maps to accompany this Natural Resources publication. They are found on the Sustainable Berkshires website at www.SustainableBerkshires.org. Maps include:

- *Natural Resources*
- *CAPS*
- *Open Space and Recreation*
- *Water Supply*

Acute Vulnerabilities

- **Bats:** The Berkshires provide important habitat for resident and migrating bats. The mortality rate of the bats found in Berkshire County hibernacula is alarmingly high, 95-100% in some sites. There is no known method of curing sick animals or preventing the spread of the disease to healthy populations. It is not known if effected populations can recover.
- **Impervious surface area more detrimental:** a new study found that 80% of stream macroinvertebrate species declined when a mere 0.5% to 2% of the watershed became covered by impervious surface area. This is much lower than the 10-20% of imperviousness that scientists currently cite is the level at which stream degradation begins to occur. Further, macroinvertebrate communities were more vulnerable in high-gradient, small-watershed streams like those in our highlands.
- **Invasive Species:** Invasive insects such as Emerald Ash Borer, Asian Longhorn Beetle and Woolly Adelgid threaten our forests, while the Zebra Mussel threatens our waterways. Invasive aquatic and terrestrial plants have already heavily colonized hundreds of acres of our lakes and uplands. A 1997 state-wide survey of floodplain forests found invasive plant species in every site studied, usually in disturbed areas.
- **Vernal pools:** There are 968 mapped potential vernal pools in the county, 78% of which are on privately owned land. Much of the development in the Berkshires occurs by clearing forest lands. Because vernal pools are only prominently noticeable part of the year when they hold water, these vital habitats are vulnerable to development.
- **Housatonic Rest of River:** some of the highest concentrations of PCBs in the nation are found here. The cleanup process, predicted to take several years to complete, may alter the look and natural feel of the river for years to come.
- **Rare species cluster:** Sheffield is listed as one of the top 10 towns in Massachusetts with the greatest density of state-listed rare species, with a total of 98 known species (27 animal and 71 plant species).
- **Climate change:** higher winter temperatures will create greater overland flows during winter/early spring and less groundwater recharge, causing greater spring flooding and more low flow/drought conditions. Distribution of plant communities and the animals that rely on them will creep northward, possibly resulting in loss of some who are not able to adapt.

Regional Goals, Policies and Strategies

GOAL CR 1.1: Implement a regional conservation strategy that emphasizes collaboration and coordination across municipal boundaries.

Policy 1.1.1: Increase collaboration and communication of conservation partners within and adjacent to the county.

Policy 1.1.2: Support the continued collaboration between conservation entities and other municipal, private, and non-profit partners in key areas where conservation interests overlap.

GOAL CR1.2: Improve land conservation and management capacity countywide.

Policy 1.2.1: Improve availability of trainings for local land trusts to support their work .

Policy 1.2.2: Retain and improve the financial resources for land acquisition and management in the region.

GOAL CR2.1: Develop and conserve in ways that will help support rich biodiversity now and in the future.

Policy 2.1.1: Implement the conservation framework through aligning conservation policy and practice across the region.

Policy 2.1.2: Track and report progress on Conservation Framework map implementation.

GOAL CR 2.2: Improve knowledge and documentation of species of conservation concern.

Policy 2.2.1: Improve and expand efforts to identify and protect species of concern populations.

GOAL 2.3: Municipalities employ land use tools and practices that support habitat connectivity and minimize adverse impacts from developed areas.

Policy 2.3.1: Provide educational materials and guides on nature-friendly development tools in order to encourage and support their use and adoption.

Policy 2.3.2: Work with the MassDOT, the region's Metropolitan Planning Organization, and local Department of Public Works (DPWs) to reduce habitat fragmentation impacts caused by transportation infrastructure.

Policy 2.3.3: Protect and improve aquatic connectivity.

GOAL CR 2.4: Work collaboratively to successfully reduce invasive species impacts.

Policy 2.4.1: Improve tracking and monitoring of invasive species.

Policy 2.4.2: Prioritize restoration efforts to control invasive species.

GOAL CR2.5: Work to restore habitat impacted by pollution and prevent future impacts to safeguard a clean environment for future generations.

Policy 2.5.1: Promote practices that minimize the impacts of stormwater runoff.

Policy 2.5.2: Protect and improve shoreline habitat.

Policy 2.5.3: Strategically continue land protection along waterways and shorelines.

Policy 2.5.4: Work to remove Berkshire Waters from the Massachusetts Integrated List of Waters (303(d) List)

Policy 2.5.5: Maintain or improve cold water fisheries.

Policy 2.5.6: Create a nonpoint source pollution, particularly stormwater management, educational program for municipal officials.

Policy 2.5.7: Strengthen and enforce wetland resource protection policies and regulations.

GOAL CR 2.6: Encourage municipalities, businesses and residents to be knowledgeable and conscientious stewards of the region's natural resources.

Policy2.6.1: Increase the public's awareness of the region's unique ecological value.

Policy 2.6.2: Increase the public's awareness of environmental issues.

Policy 2.6.3: Encourage and increase public involvement in the Rest of River Cleanup.



Key Trends

- Almost 33% of the county (202,714 acres) is permanently protected open space.
- The vast majority of undeveloped lands in the county (68%) are privately owned. Approximately one half of family forest landowners (10 ac. or more) across Massachusetts are 65 or older, while the median age of working Berkshire farmers is 58 years. This indicates that the ownership of substantial open space lands may very well be changing hands in the coming decades.

Open Space Economy

- In a recent visitor scenic beauty was the principal reason 88% of all visitors surveyed cited for having selected the region as their destination.
- A state study estimates that each acre of forest in the state provides \$1,500 annually in economic value from forest products, water filtration, flood control and tourism. This equates to more than \$7 million to the Berkshire economy per year.
- Business owners and executives state that a high quality of life is necessary to attract and keep new ventures and employees. The aesthetic and recreational benefits of open space provide increased market value to properties in close proximity.
- As documented in more than 128 Cost of Community Services Studies across the U.S. and Mass., taxes collected from residential development do not cover the full cost of the municipal services they receive. Inversely, taxes from industrial/commercial and agricultural/woodlands subsidize residential uses. Revenue from farms and forests support local families, some of which have worked the land for generations. Local farms provide fresh produce fresh produce and meat, while forests provide wood products, heating fuel and maple syrup.

Conservation and Recreation Land

Almost 33% of the county (202,714 acres) is permanently protected open space, 80% of which is open to the public for recreation.

National

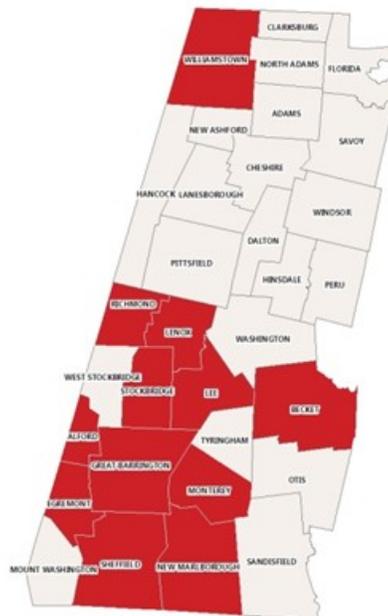
- **Appalachian Trail:** The Trail, with preserved land along its route through the region from Connecticut to Vermont, is a major recreation and open space corridor.

State/Statewide

- **State Parks, Forests and Reserves:** The county boasts 22 state parks, forests and reserves managed by the Department of Conservation and Recreation (DCR). Large DCR holdings include October Mountain State Forest (~16,127 acres and the state's largest) Savoy Mountain State Forest (~11,118- acres), Mount Greylock State Forest (~12,500 acres), Beartown State Forest (~12,000 acres), and Pittsfield State Forest (~10,000 acres).
- **Wildlife Management Areas (WMAs):** Wildlife Management Areas and conservation easements, managed by MassWildlife, are another important recreational resource, offering 28 properties for public use. The county hosts nine WMAs larger in size than 1,000 acres, with Chalet (6,437 acres primarily in Cheshire and Dalton), Peru (4,730 acres in Peru and Windsor) and Stafford Hill (1,592 acres in Cheshire and Windsor) being the three largest sites.
- **Non-Profit Reserves:** Mass Audubon (Canoe Meadows, Pleasant Valley, etc.) and Trustees of Reservations (Naumkeag, Goose Pond Reservation, etc.) are some of the non-profit groups who hold conservation land open for recreation in the Berkshires.

Local

- **Local Land Trusts:** Twelve of the 32 municipalities in the Berkshires have their own local land trust working to conserve land within their municipal boundaries. Berkshire Natural Resources Council is by far the largest and most active land trust, and works throughout the county.



- Alford Land Trust
- Becket Land Trust
- Berkshire Natural Resources Council (region-wide)
- Egremont Land Trust
- Great Barrington Land Conservancy
- Laurel Hill Association (Stockbridge)
- Lee Land Trust
- Lenox Land Trust
- Monterey Preservation Land Trust
- New Marlborough Land Preservation Trust
- Richmond Land Trust
- Sheffield Land Trust
- Stockbridge Land Trust
- Williamstown Rural Lands Foundation

Ownership of Conserved Land

Eighty percent of permanently protected land in Berkshire County is open to the public. A 2006 state study noted that the county has the largest per capita acreage of recreation and conservation lands in MA at 1.35 acres per person.

Landowner	Acres of Berkshire County Permanently Protected Land by Ownership	Percent of Permanently Protected Land
Department of Conservation and Recreation (DCR)	107,292	52.9%
Division of Fisheries and Wildlife (DFW)	25,941	12.8%
Municipalities	21,186	10.5%
National Park Service	4,661	2.3%
Non-Profit Organizations	10,706	5.3%
Land Trusts	7,319	3.6%
Other (largely private lands with conservation and agricultural restrictions)	25,609	12.6%
TOTAL	202,714	100.0%

Outdoor Recreation

Land Based Recreation

Nature and Wildlife Viewing

Figures compiled by the U.S. Fish and Wildlife Service in 2006 indicate that approximately 1.9 million residents participated in wildlife viewing activities in Massachusetts. Sixty-seven viewing sites have been identified across the state as exceptional wildlife viewing areas, and six of these areas are in Berkshire County.

Birding

The region hosts seven sites that have been designated by Mass Audubon as Important Bird Areas (IBAs).

Hiking and Walking

The region boasts plentiful trail options on state, municipal, and non-profit conserved lands. These accommodate a variety of trail users and offer a range of difficulty and length. The longest trails in the region are its three long-range trails:

- Appalachian Trail
- Taconic Crest Trail
- Mahican-Mohawk Trail

Mountain Biking

There are eight DCR properties with trails designated for mountain biking. Kennedy Park, a Lenox town park, is also a well known mountain biking destination. These properties are scattered across the county.

Hunting

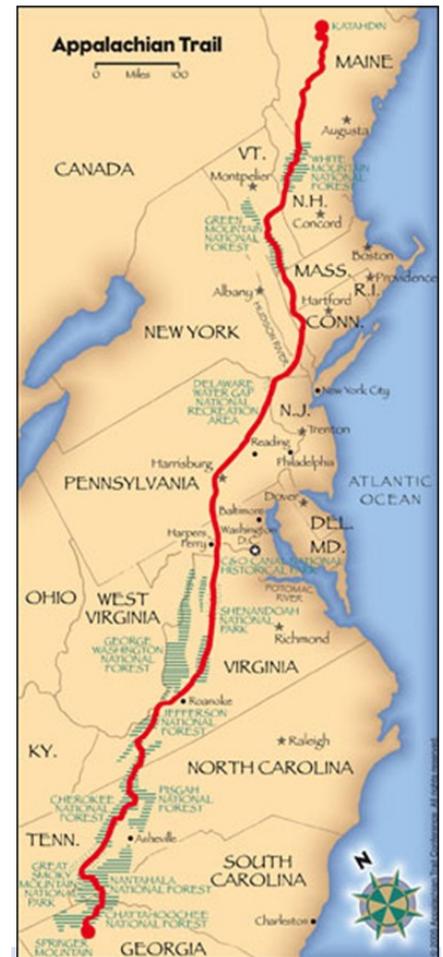
Hunting is allowed on all state-owned conservation lands except for certain designated areas. Altogether, 21 game species are available to hunt; pheasants are stocked in seven WMAs, two state forests, and 14 other sites across the county.

Off-Road Vehicles

The Berkshires hosts all four state forests that allow ORVs: October Mountain (30 miles of trails), Beartown (25 miles of trails), Tolland (15 miles of trails) and Pittsfield (14 miles of trails). Through informal surveys, the DCR estimates that the majority of ORV users in Pittsfield State Forest were Massachusetts residents.

Snowmobiles

The Berkshires host a large portion of the Statewide Snowmobile Trail System (SSTS). This 2,000-plus mile system is unique in that it is comprised of both public and private lands that crisscross the state, reaching into nearby counties and other states.



Commonly referred to simply as the "AT", this 2,180-mile hiking trail spans 14 states along the east coast from Georgia to Maine. The 89 miles of trail that traverse Massachusetts from Connecticut to Vermont are all located in Berkshire County. Two to three million people hike various stretches of the trail each year.

Commonwealth of Massachusetts

The majority (65.7%) of permanently protected land in the county is owned by the Commonwealth, primarily by the DCR (107,292 acres) and DFW (25,941 acres).

Municipalities

Municipalities own 25,237 acres of land. Some of this is located within municipal park and recreation systems. Thirteen of the Berkshires' 32 municipalities also hold lands for the specific purpose of providing a clean supply of drinking water (water supply areas).

National Park Service

The National Park Service owns an additional 11,299 acres along the Appalachian Trail.

Non-Profit Organizations

Conservation organizations such as The Nature Conservancy, Mass. Audubon and the Trustees of Reservations collectively own more than 10,000 acres in the county.

Water-Based Recreation

Boating

The county has more than 30 lakes and ponds that are open to the public, twenty of which have boat launches. Most of the larger recreational lakes that better accommodate motorboats are located in the Housatonic River Watershed, with the exceptions being Cheshire Reservoir (in the Hoosic Watershed) and Big Pond and Otis Reservoir (in the Farmington Watershed).

Kayaking and Canoeing

The county's rivers serve as blueway recreational routes for canoeists and kayakers. Overall, there are more than 25 formal boat launches and canoe/kayak access sites across the county. Sections of the Housatonic and Hoosic rivers can be paddled much of the year.

Fishing /Ice Fishing

Fishing is allowed year-round in Berkshire waters. Trout are stocked in dozens of streams and river sites throughout the region in spring and during a short season in select waterways in the autumn. There are catch-and-release areas in Lee and Glendale. Brookstock salmon are stocked in Goose Pond, Onota Lake and Stockbridge Bowl. Ice fishing is a major winter activity in Berkshire County. Our frozen lakes and ponds often support ice not found in the eastern portion of the state or southern New England, drawing anglers into the region. Several fishing derbies are held throughout the county, often sponsored by area sporting clubs or held as fundraising events. Fly fishing is also a popular option and some guided trips are now offered by private companies.

Swimming

Many of the county's municipalities host swimming areas with beaches. While some municipal beaches are open to the public at large, many are only open to town residents. Seven DCR state forests host public swimming beaches, although there may be a small parking fee.

Land Trusts

Twelve of the 32 municipalities in the Berkshires have their own local land trust working to conserve land within their municipal boundaries. Ten of these own conservation lands. As illustrated by the map, the majority of these are concentrated in the south-central portion of the county. Today these land trusts protect more than 7,319 acres, which is approximately 4% of the permanently protected lands in the county. Of this the Berkshire Natural Resources Council (BNRC), a region-wide land trust, owns 4,987 acres, 68% of the land trust acreage in the county. BNRC also holds 10,060 acres of land in conservation easements.

Patchworks of Conservation

The largest permanently protected contiguous block of open space area in the region is in and around October Mountain State Forest and the Darey Wildlife Management Area—almost 26,000 acres. The mix of landowners include DCR, DFW, city of Pittsfield, towns of Lee and Lenox, BNRC and the American Chestnut Nominee Trust.

Other Outdoor Recreation Options

The region has a number of more "urban" recreation options that are either formally organized, private ventures, or require facilities and infrastructure, including:

- Parks and Recreation Fields
- Golf Courses
- Bike Trail
- On-Road Cycling
- Downhill Skiing
- Summer Camps
- Outdoor Events and Races



Butternut Basin Ski Area in Great Barrington, together with Bousquet and Berkshire East in Pittsfield and Jiminy Peak in Hancock, make the region a northeast ski destination for many,

Recreation Opportunities by Season

Outdoor recreation options help balance out the seasonality of arts-driven tourism in the region's economy by bringing in new visits for skiing, snowmobiling, and ice fishing.

	Activity	Spring	Summer	Fall	Winter
Land	Nature and Wildlife Viewing	●	●	●	●
	Birding	●	●	●	●
	Hiking	●	●	●	●
	Snowshoeing				●
	Mountain Biking	●	●	●	
	Cycling	●	●	●	
	Off-Road Vehicles	◐	●	●	◐
	Snowmobiling	◐			●
	Hunting	●	◐	●	●
	Nordic Skiing				●
	Downhill Skiing				●
	Water	Swimming		●	
Kayaking/Canoeing/Boarding		●	●	●	◐
Boating (Sail/motor)		◐	●	◐	
Fishing/Ice Fishing		●	●	●	●

Regional Goals, Policies and Strategies

GOAL CR 3.1: Offer a comprehensive system of high-quality outdoor recreation options that maximizes health and economic benefits to the region.

Policy 3.1.1: Identify and pursue a variety of traditional and non-traditional resources to support maintenance of outdoor recreation trails and facilities.

Policy 3.1.2: Grow the region's notoriety as a prime outdoor recreation destination in the northeast.

GOAL CR 3.2: Cultivate an integrated trail system with a focus on diversity and connectivity.

Policy 3.2.1: Support planning and implementation of a Western New England Greenway that integrates existing regional bike planning and implementation efforts.

Policy 3.2.2: Continue to extend, connect and promote long-distance routes.

Policy 3.2.3: Encourage diverse trail options to accommodate a range of use needs.

GOAL CR 3.3: Increase accessibility of recreation offerings.

Policy 3.3.1: Strengthen linkages between conservation and recreation options in developed areas with those in the outlying rural landscape.

Policy 3.3.2: Reintroduce Berkshire residents and children to the natural world.

GOAL CR3.4: Improve and Enhance Use and Access to Rivers and Lakes

Policy 3.4.1: Improve river access and continuity to enhance recreational uses.

Policy 3.4.2: Lakes Protection

Policy 3.4.3: Enhance swimming opportunities



Key Trends

Energy Basics

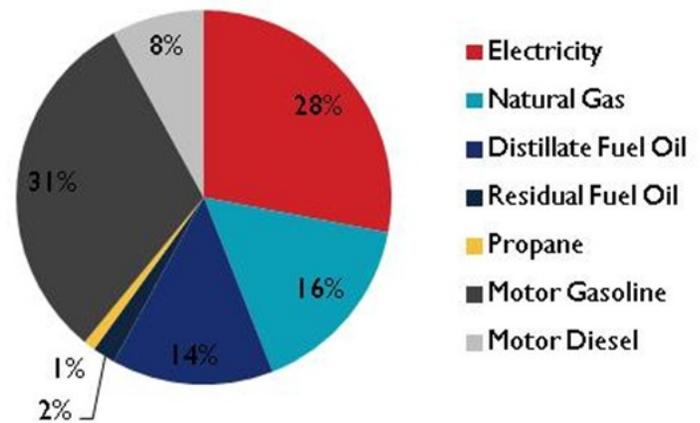
- Our burning of fossil fuels in homes, businesses and vehicles is linked to climate change.
- Climate change in the Berkshires is resulting in rising temperatures, shifting of habitats northward, increases in numbers and severity of storms, and greater risk for summer drought cycles.
- We in Berkshire County import 93% of our fuel.
- The statewide importation of fuel results in export value of \$22 billion per year.
- Massachusetts ranks as a national leader in energy issues — vying with California — due to its policies and programs for energy conservation, efficiency and renewable energy generation.
- Despite aggressive energy policies, the state continues to have some of the highest electricity costs — 6th highest in nation in 2011. This continues to be an economic issue for the business and municipal sectors.

Energy Challenges

- Climate change increases risks for farming, maple sugaring and the ski industry.
- A nation-wide survey revealed that 2/3 of American students know little or nothing about the link between burning fossil fuels and climate change.
- Small and medium-sized businesses could reap economic benefits from reducing energy use, but few owners have the capacity to pursue existing programs.
- Our rural, dispersed settlement patterns are a challenge to reducing transportation-related emissions.

Berkshire Energy Baseline

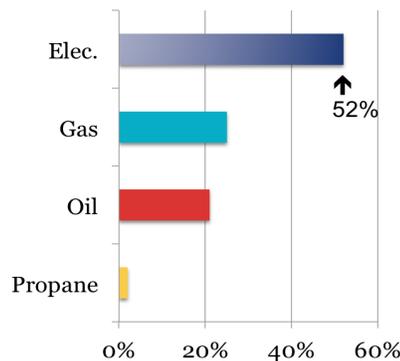
An inventory of our greenhouse gas emissions reveals that our driving habits are the greatest single source of emissions (totaling 39%), with electricity also a large emission source.



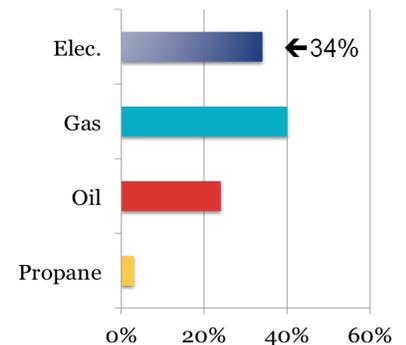
Energy Use in Buildings

Fossil fuels consumed in Berkshire County buildings emits more than 1.1 million tons of CO₂ into the atmosphere per year. More than half (52%) of the emissions from our buildings and business-related processes come from electricity, despite the fact that electricity represents only 34% of the energy used.

Percent CO₂ Emissions



Percent Energy Consumed (British Thermal Units)



Energy Use in Transportation

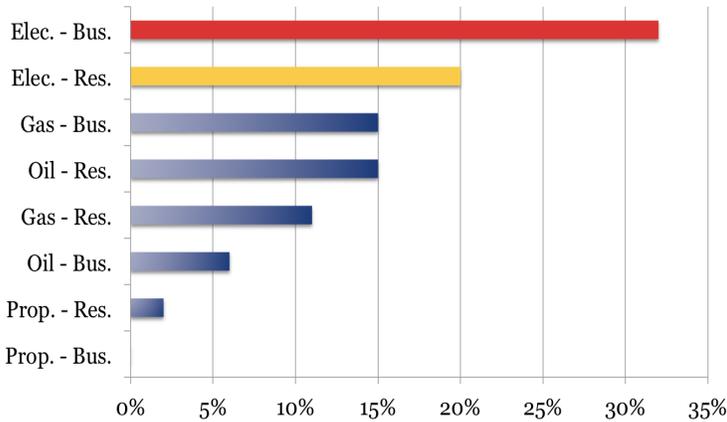
Fossil fuels consumed by vehicles in Berkshire County emit approximately .75 million tons of CO₂ equivalents into the atmosphere per year. When broken down by fuel, 93% of this is from gasoline powered vehicles and the remaining 7% is from diesel powered vehicles.

Energy Conservation & Efficiency

Greenhouse Gas Emission by Sector

Approximately 1/3 of total greenhouse gas emissions from the built environment in Berkshire County are caused by the consumption of electricity by the business/commercial sector (see graph below). The business sector includes commercial, industrial and municipal users. Electricity is used for heating, lighting and commercial and industrial processes.

Building CO₂ Emissions 2011, Berkshire County



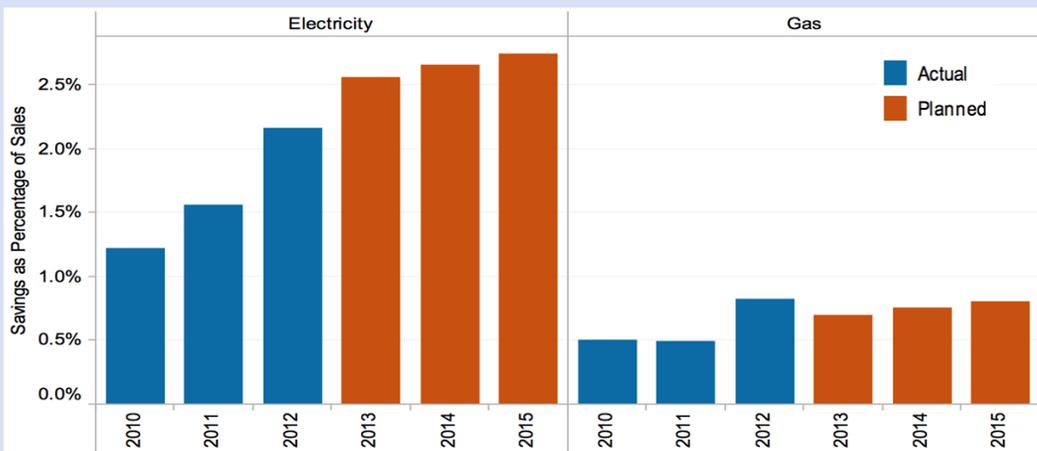
Emissions from the consumption of electricity in New England is generally lower per kilowatt than other regions of the county, due largely to the burning of natural gas over coal, but electricity use is projected to incrementally increase.

Reducing electricity use not only reduces emissions, but also reduces energy costs to the business and municipal sectors, thus reducing the overall cost of doing business in the region. Reducing energy consumption brings about cost savings decreases our reliance on fuel imports, an important issue to our region which economically lags behind the rest of the state.

The business/commercial sector often achieves the most energy reduction and cost savings (see below). Although the costs of conducting energy audits and installing energy-saving measures are often offset by programs offered by the local utility companies and state and federal agencies, it can be daunting to locate the program that will fit the individual needs of residents and businesses. Locating contractors with the specific skills to install recommended improvements can also be difficult.



Efficiency Program Savings as Percentage of Utility Sales*



The three utilities in Berkshire County offer energy conservation and efficiency programs to their customers. Electric utilities are National Grid and Western Mass. Electric Company, and the gas utility is Berkshire Gas. Notable statistics for their programs show that:

- 61% of electricity in county is used by the business sector.
- 75% in savings in electricity comes from business customers.
- 55% of savings in natural gas comes from business sector.

* Note: Utility territory-wide, not county specific

Renewable Energy

Berkshire Renewable Energy Projects

According to the Massachusetts Clean Energy Center, there are at least 337 renewable energy systems in Berkshire County, ranging from small residential systems to large, multi-megawatt projects. The county's renewable energy generation has grown, going from just over 1,000 kilowatt (kW) in 2005 to more than 43,000 kW by early 2013. This equates to almost 91 million kilowatt hours (kWh), equaling about 7% of the total used in the county.

Although there are more than 325 solar photovoltaic installations in Berkshire County (97% of the total number of renewable projects), the current five wind turbine projects in the county generate 77% of the total renewable energy kilowatt hours generated in the county.

System Type	Number of Systems	Capacity (kW)	Estimated Annual Generation (kWh)
Biomass	2	420	2,943,360
Hydropower	4	1,926	7,423,574
Solar photo-voltaic PV)	328	8,969	10,213,897
Wind	5	32,100	70,299,000
Totals	338	43,415	90,879,832

Renewable Energy and Public Sentiment

Berkshire County residents who participated in public surveys and workshops agreed that a mix of energy conservation/efficiency and renewable energy generation will be needed to meet a regional goal of reducing greenhouse gas emissions by at least 25% by 2020 and 80% by 2050.

Attendees of workshops in Lenox favored solar PV energy generation over wind energy, but attendees of a similar workshop in North Adams favored a fairly even mix of solar and wind energy.

In the fall of 2012 Williams College students conducted public surveys in North, Central and South Berkshire County. Of these:

- 95% of respondents would ideally like to see the county generate at least 50% of our electricity from local renewable energy projects.
- 69% of the respondents who had seen renewable energy projects in the county liked them.

Renewable Energy Potential

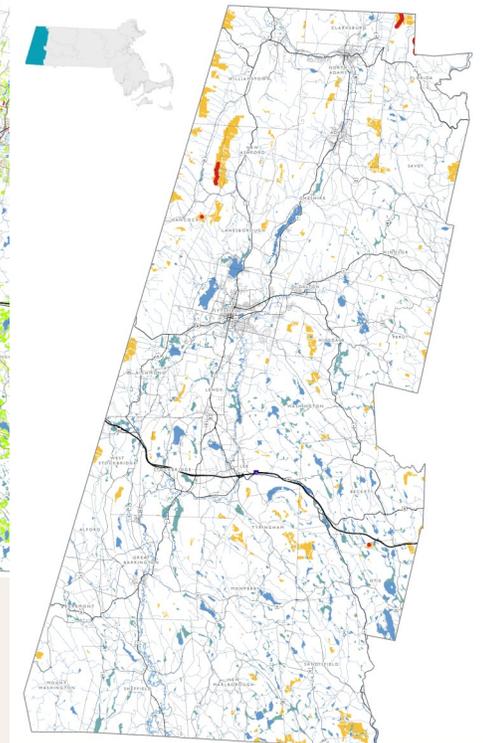
A coarse GIS analysis was conducted to map areas in the county that have the potential for renewable energy generation for wind energy, solar PV and hydropower.

- 2% of the county was identified as having the potential for commercial wind power projects. This is based on sites with the greatest potential for consistent wind and after removing sensitive habitats from consideration.
- 562 commercial buildings in the county, 15,000 square feet or larger, were identified as potential solar PV sites. This does not include large surrounding parking lots, which might also host PV arrays.
- 62 existing dams with structural heights of at least 20 feet were also identified.

SOLAR ENERGY POTENTIAL



WIND ENERGY POTENTIAL



The analysis was conducted as a general planning tool and is not site specific. The results of these analyses, including maps, can be found at www.sustainableberkshires.org.

Setting an Energy Reduction Goal

- Massachusetts has established a goal of reducing greenhouse gas emissions by 25% below the 1990 level by the year 2020, and by 80% below that level by 2050.
- Berkshire residents responding to a survey and participating in public workshops consistently voiced their desire to, at a minimum, match the state's emission reduction goals.
- Residents agreed that emission reduction goals should be achieved through a mix of conservation and efficiency programs and renewable energy projects.
- Reducing the county's greenhouse gas emissions would mean that we need to reduce our annual CO₂ emissions by almost 95,000 tons.

Reduction from baseline

	CO ₂ (tons)
Baseline	1,128,092
2020 Goal	846,069
Reduction needed	282,023

Reduction net of key trends

	CO ₂ (tons)
Baseline	1,128,092
Load growth to 2020	18,997
EE program savings	-149,860
RPS increases	-56,175
2020 Projection	941,045
2020 Goal	846,069
Reduction needed	94,985

Regional Goals and Policies

GOAL CE1: Support broader understanding of climate change threats and opportunities for individual action.

Policy CE1.1: Improve availability of information about local impacts of climate change, sources of greenhouse gas emissions, and opportunities to reduce impacts.

Policy CE1.2: Encourage local schools and colleges to integrate climate change- and energy-related topics and career options into curricula.

GOAL CE2: Commit to meet or surpass the state's climate emission reduction target.

Policy CE2.1: Adopt this climate and energy plan and work to implement its contents.

GOAL CE3: Maximize energy efficiency of the built environment as a means of reducing climate emissions from and operating costs to residents, businesses, institutions, and government.

Policy CE 3.1: Encourage greater participation in existing energy efficiency and conservation programs through marketing and promoting options available to residents and businesses.

Policy CE3.2: Work to address information or financing obstacles to energy efficiency.

GOAL CE4: Update municipal practices and regulations to support low-emission living.

Policy CE 4.1: Encourage and support local governments to adopt Massachusetts Green Community criteria.

Policy CE 4.2: Encourage and support the emergence and activity of local energy committees in Berkshire County to help implement programs at the municipal level.

Policy CE 4.3: Improve transit opportunities.

GOAL CE5: Offer competitive renewable energy costs now and in the future.

Policy CE5.1: Grow market demand and readiness for renewable energy sources.

GOAL CE6: Increase regional generation and use of clean, renewable energy.

Policy CE6.1: Work proactively to define the locations, types and parameters within which renewable energy development can move forward in the region.

Policy CE 6.2: Expand awareness of existing renewable energy generation and use across the region and in neighboring counties.

Policy CE 6.3: Continually track best practices for siting and technologies used to ensure any development in the region is of the highest quality and minimizes any potential negative impacts to the greatest practical extent.

GOAL CE7: Build climate resilience into the region's planning and practices.

Policy CE7.1: Integrate planning for increased temperatures into municipal and regional practice.

Policy CE 7.2: Work to reduce impacts caused by hydrologic extremes from increased intensity and frequency of storm events to periods of drought.