

**Open Space Preservation Committee
October 15, 2013
Agenda
Joint Special Meeting
Open Space Preservation Committee and Conservation Commission
Conference Room B
7:30 p.m.**

1. Call to order
2. Appoint Secretary
3. Attendance
3. Old Business
 - Mansfield Tomorrow
4. Adjournment

Open Space Working Lands, Parks, Preserves, and Greenways

Goal: Mansfield's open space and working lands provide the foundation for a healthy environment, economy and quality of life.

Policy: Mansfield values, preserves and stewards its Town open spaces and working lands. Mansfield's private open spaces and working lands protect and enhance natural features

Findings and Challenges

What the Community Said

- I love that Mansfield offers open spaces, etc., in combination with cultural resources. This is critical to our decision to live here
- One goal should be to strive for interconnected open spaces rather than isolated islands of open land.
- Do a better job of managing the land we already own.

Current Conditions

Open Space and Working Lands

Mansfield is fortunate to have 75% of its land in open space, which is the basis of the Town's quality of life, environment and economy. These areas define the character of the Town and make it an attractive and healthy place to work and live. Maintaining the benefits of these open space areas will require both public and private efforts to preserve it and to be good stewards of our land and water.

For the purposes of this Plan the Mansfield Open Space Committee has adopted the following definitions:

Open Space includes a wide variety of landscapes, such as working lands (farmland and forestland) and natural areas. Open space also offers features valued by the community, such as scenic views, historical settings, natural recreation areas and green spaces in developed areas. Some open space is permanently or temporarily protected to maintain its current state. The majority of open space is not.

Working Lands refer to areas that are actively used in agricultural and forestry production, and which may also support the associated livelihoods of tourism, outdoor recreation, and commerce in rural communities (see Natural Systems and Economic Development chapters).

Protected Lands are areas that have conservation restrictions or are owned by a land preservation organization.

Benefits of Open Space and working lands

The benefits of open space and working lands are numerous. They provide:

- *Healthy natural systems* -open space contains and protects most of our natural resources (see Natural Systems chapter).
- *Public safety services* – natural areas offer protection from problems such as erosion, flooding and pollution..
- *Character*-scenic views define the Town’s rural identity and influence how people experience the town.
- *Health*-open space contributes to our health by providing opportunities for physical activity, relaxation, improved air and water quality, and land to produce healthy food.
- *Economy* - Open space makes Mansfield an inviting place, which helps attract new businesses and residents to town. Most open space land is privately owned farms and forests, providing food and forest products. Owners of open space, farm and forest land usually pay more in taxes than they require in services, thus helping to offset the higher service requirements of residential uses.

Mansfield’s Open Space

Mansfield residents enjoy a varied and attractive landscape and diverse wildlife. Most of our open space is rural in character, including farmland, forests, and a diversity of natural features. Historical sites, parks and scenic views are part of our everyday experience. Green spaces and trails in residential and commercial areas enhance our lives at home and at work.

Farmland

Mansfield’s residents value the scenic views and agricultural products provided by our local farms. Farmland contributes to the Town’s attractiveness and sense of place. These areas also provide wildlife habitat and help protect water and air quality. Our farmland is typical of a New England hill town. Cropland and pastures extend across rolling hills; other farmland lies in level river valleys and in the Willimantic Basin. Agricultural land occupies 10.4% of the Town’s land (3,039 acres). Most of it is privately owned. Three dairy farms own or lease over 1,800 acres; the other 35 agricultural operations use less than 50 acres, producing livestock and meat products, fruits and vegetables, honey, maple syrup, Christmas trees and nursery stock. The Town has eight properties with agricultural fields leased to local farmers. The University’s farm encompasses 700 acres for dairy and livestock. About 24% of the Town has prime agriculture soils (see Natural Systems chapter). About 75% of Town is zoned Rural Agricultural Residential (RAR 90), where agriculture or 2-acre house lots are permitted. *Mansfield Agriculture Strategy*, by Yellow Wood Associates (2013), provides a detailed report on our farmland.

The Town continues to experience loss of farmland to development. It is easy to build on and expensive to preserve. The continued existence of Mansfield’s farmland depends on the economic viability of its farm operations (see Economic Development chapter). Most people are not personally experienced with agriculture and are unaware of agriculture’s benefits and challenges. It is critical to agriculture’s success to provide agritourism opportunities and inform the public about the important role of agriculture in Mansfield.

Natural Features

Mansfield has a diversity of natural habitats and wildlife, including forests, other plant communities, water features, wildlife and aquatic species (*see Natural Systems chapter*). Forests predominate in our open space (60% of land cover) and provide many benefits, such as protecting our water supply, improving air quality, providing wildlife habitat and forest products, sequestering carbon, and offering opportunities for recreation and tourism. Large forest tracts are essential to wildlife that requires deep forest, and they provide the most benefit to

water and air quality. Other types of plant life offer varied scenes, including grasslands and wetlands (swamps and marshes). All of these habitats provide food and shelter for a wide range of wildlife and aquatic species.

Mansfield's water features include four rivers (Willimantic, Fenton, Mount Hope and Natchaug) and their tributaries. There are three large lakes (Naubesatuck Lake in Mansfield Hollow, Hansen's Pond and Eagleville Pond) and many smaller ponds and vernal pools. These waterways host a diversity of aquatic plants and animals and invite water-based recreation, such as fishing and boating. Mansfield has several species listed on CT DEEP's data base of rare, endangered, and threatened species. Unique plant communities include white cedar swamps, a leatherleaf swamp, and old white pine groves, which contain unique species. Protections and stewardship of our natural areas is important to the Town's character and environmental health.

Open space also includes historic sites, such as the Commonfields in Mansfield Center, where the town's first settlers shared agricultural land. Preservation of such sites is important to keeping Mansfield's heritage alive.

Parks and Preserves, Greenways

Mansfield maintains an extensive network of protected and un-programmed open space parcels containing woodlands, old farm fields, ponds, and wetlands with unimproved trails. In the 1990's, Mansfield was selected as one of Connecticut's designated "trail towns." All four of Mansfield's rivers (Willimantic, Fenton, Mt Hope, and Natchaug) are state designated greenways/blueways. In addition, the Nipmuck trail, which runs from Mansfield to the Union CT (on the Massachusetts border) is part of the CT Blue Dot Trail Greenway. A greenway is defined in the CT General Statutes section 23-100 as "a corridor of open space that (1) may protect natural resources, preserve scenic landscapes and historical resources or offer opportunities for recreation or non-motorized transportation, (2) may connect existing protected areas and provide access to the outdoors, (3) may be located along a defining natural feature, such as a waterway, along a man-made corridor, including an unused right-of-way, traditional trail routes or historic barge canals or (4) may be a green space along a highway or around a village."

In 2012, the Willimantic River was recognized as a National Recreation Trail (NRT) by Secretary of the Interior, Ken Salazar. National Recreation Trail designation is given only to exemplary trails of local and regional significance. NRT trails are recognized as part of America's national system of trails.

Source- <http://www.americantrails.org/nationalrecreationtrails/about.htm>

Additional passive recreational opportunities, including picnicking, fishing, hiking and boating, are available at the Federally-owned and State-managed Mansfield Hollow State Park, in UConn Forest Tracts, and Joshua's Trust Lands (see open space chapter for more information about these properties). There are several local and regional organizations that work to promote, manage, and advocate for public access and education of preserved natural areas, trails and greenways. Some of these organizations include the Last Green Valley, Inc. www.lastgreenvalley.org, CT Forest and Parks Association (ctwoodlands.org), Friends of Mansfield Hollow (friendsofmansfieldhollow.org), the Willimantic River Alliance (willimanticriver.org), and others. In addition, the Town of Mansfield's Parks Advisory Committee oversees a Natural Areas Volunteer (NAV) Program, which organizes volunteer events to perform management tasks for parks and open space, and Friends of Mansfield Parks (FOMP), which organizes educational events to raise awareness about parks and preserves throughout the year. The Town has developed collaborative relationships with these organizations, which has resulted in mutual support in seeking grant funding for projects, managing parks and natural areas and participating in educational walks such as Walktober and CT Trails Day.

Stewardship of these public open space areas is an important part of maintaining quality recreation experiences and wildlife habitat. Promoting public activity in and access to open space is important to the quality of life and work in Mansfield.

Below is a listing of Parks and Preserves owned by the Town of Mansfield

Site	Location	Facilities
Commonfields	Bassetts Bridge Road	-hiking trails -wildlife viewing area
Coney Rock Preserve	Chaffeeville Rd./Mulberry Rd	-hiking trails
Dunhamtown Forest	Dunham Pond/Mansfield City/White Oak Rds./Max Felix Dr.	-hiking trails
Dorwart Preserve	Mulberry Road	-hiking trails
Eagleville Preserve	Stafford Rd./So. Eagleville Rd	-fishing access to Willimantic River -hiking trails -community garden area
Fifty-foot cliff Preserve	Storrs Rd./East Rd	-hiking trails
Gifford Field	Spring Hill Rd	-multi-use ball fields including youth baseball diamond
Lions Club Park/Dorwart Preserve	Warrenville Rd	-multi-use ball fields including 3 full-size soccer fields -snack bar, picnic pavilion -hiking trails
Merrow Meadow	Merrow Rd	-fishing, canoeing access to Willimantic River -hiking trails (part. handicap-accessible)
Moss Sanctuary	Route 195 behind Mansfield Apartments and Birchwood Heights Rd	-hiking trails
Mount Hope Park	Warrenville Rd	-fishing access to Mt. Hope River/pond -hiking trails
River Park	Plains Rd	-handicapped accessible canoe/kayak launch -hiking trails -multi-use recreational field
Saw Mill Brook Preserve	Access from the Nipmuck Trail entrance off Puddin Lane or from Joshua's Trust's Wolf Rock Preserve off Crane Hill Road	-hiking trails -wildlife viewing platform
School House Brook Park (Bicentennial Pond)	Clover Mill Rd	-wheel chair accessible beach area with bath house -fishing access

		-picnic pavilion -children’s playscape -hiking trails
Shelter Falls Park	Birch/Hunting Lodge Rds	-hiking trails
Misc. Open Space / Recreational Parcels	throughout Mansfield	-undeveloped, but some parcels have trails and potential for more active recreation. See list of Town-owned land in Appendix E
Joshua’s Trust	Throughout Mansfield	-hiking trails -undeveloped parcels
Univ. of Connecticut	Storrs Road	-UConn Forest (includes permanent trail easements on the Nipmuck Trail located in UConn’s Fenton Track, which lies behind Horse Barn Hill and the College of Agriculture.) -community garden area

Open space in Developed Areas

Within commercial and residential areas, a small park or trail system can offer recreation and relaxation. Trails that connect to trail systems, parks or greenways can expand the potential for walking and enjoying the outdoors.

Scenic Features

Possible quote: “It is so beautiful here!” Visitor from the Midwest

Open space offers opportunities for scenic views from roads and trails that influence how people experience Mansfield. These scenes define the town’s identity and encourage residents and visitors to enjoy our Town and to appreciate our natural, agricultural and historical resources. Mansfield is a classic New England town with hills, valleys and waterways (see Natural Systems chapter). Predominantly rural scenes encourage residents and visitors to relax and enjoy valley views from hilltops, and conversely, views of forested or agricultural hills from the valleys. Stonewalls line winding roads that pass fields, forests, and historic villages. There are many vantage points with public access along roads, in parks and on the water. Popular views include farmland along Route 195 and Route 32, far-reaching perspectives from Coney Rock, 50-foot Cliff and Wolf Rock, and water views at Eagleville dam, in Mansfield Hollow, and along the Fenton River. The Town has 7 designated Scenic Roads (refer to list elsewhere?).

Development proposals should continue to avoid adverse Impacts on scenic views and even enhance views to be enjoyed both within and outside of a developed area.

TEXT from the 2006 POCD (Linda may need to update this). Mansfield’s subdivision regulations allow flexibility for siting buildings within a building area envelope in order to preserve significant features including scenic resources and views and vistas. For other projects not in subdivisions, the planning staff, as well as the Planning and Zoning Commission, will work with applicants through the design review process, in order to arrive at plans that sensitively

preserve Mansfield's scenery by siting structures or features in such a way that significant views and vistas are preserved. Such matters as lot size, building heights, and the location of buildings or features on the site will be considered. Include map of Scenic Resources and Glossary from 2006 POCD? Or just refer to them?

Maintaining the Benefits of Open Space

Mansfield can continue to enjoy and benefit from our open space by preserving it and supporting good stewardship of both public and private lands.

1. Preservation of Open Space

Current Ownership of Open Space

Most of our open space, including working lands, is privately owned. The majority of privately owned open space is either temporarily protected through the Public Act 490 (PA 490) program or not protected from development. Some privately owned open space and working land is permanently protected by a conservation or agricultural easement.

Since the mid-1980's, Mansfield has funded and managed an active open space acquisition program. Since 1990, Mansfield has purchased over 32 open space parcels, totaling over 1,000 acres of land. In addition to town purchases, the Town has acquired open space through donations and dedication requirements included in the town's land use regulations. As of September 1, 2013, the town owns or manages over 2,500 acres of undeveloped open space land, including over 400 acres of private land with conservation easements. These acquisitions include eight properties with agricultural land (65 acres) that is leased to local farmers

Open Space owned by other public entities such as state agencies (including UConn) and federal agencies also provide numerous environmental, health, and economic benefits and add significantly to the Town's rural character. UConn owns x acres of forest and x acres of farmland. Approximately 116 acres are owned by CT Department of Energy and Environmental Protection (CT DEEP) and x acres by the Army Corps of Engineers and leased to the state at Mansfield Hollow State Park.

Joshua's Tract Conservation and Historic Trust, a regional non-profit volunteer land trust, owns and/or manages approximately 24 properties totaling 584 acres and 9 conservation easement areas totaling 314 acres in Mansfield. All of these easements and properties are permanently protected. The Town has a long history of working collaboratively with Joshua's Trust. Noteworthy Joshua's Trust properties in Mansfield include Whetten Woods, between Dog Lane and Hanks Hill Road (29 acres), the Lof Woodlands, off Route 320 (18 acres), Wolf Rock Preserve, in southern Mansfield (93 acres); Coney Rock Preserve, north of Mulberry Road (133 acres); and the historic Gurleyville Grist Mill, on the Fenton River (9 acres). Joshua's Trust properties and easements are shown on map x. More information about Joshua's Trust is available at www.joshuaslandtrust.org.

Preservation Status of Open Space

Privately owned open space can be temporarily protected by a special tax provision. Public Act 490 is Connecticut's Land Use Value Assessment Law for farm land, forest land and open space land. "Under PA 490, farm land, forest land, and open space is assessed based on the current "use value" of the land. 'Use Value' refers to what the land is actually used for rather than what it might be worth on the open market, i.e. its

“highest and best use” p. 2 http://www.cfba.org/images/resources/complete_490guide_cfba.pdf. The Use Value is lower for farm and forest lands, therefore making the taxes on these lands lower. The goal is to encourage landowners not to develop their land. Should the owner decide to develop the land, municipalities have authority to recapture the loss tax revenue. Municipalities are required to use PA 490 on qualified farm and forestland. Using the PA 490 use assessment for open space is optional. Currently, Mansfield has 3,257 acres of farmland and 5,169 acres of forestland in 490 status.

Public ownership does not guarantee permanent protection. Of the 2500 acres of Town-owned open space and agricultural land, only x acres is permanently protected with a conservation easement held by the CT DEEP or CT Forest and Parks Association. As the town grows, there is the possibility that there could be pressure to use open space for other municipal, state or federal uses, or sell the property to a private landowner. Currently, none of the state-owned and federally owned open space and farmland properties are protected with a conservation easement.

Both the state and the Town have permanently preserved agricultural land through restrictive easements on privately owned farmland. The State of Connecticut Department of Agriculture has purchased the development rights on approximately 290 acres in southwestern Mansfield. In addition, the Town holds three agricultural easements on private farmland (28.5 acres).

Show map of land that is preserved vs. not preserved. We will need to make this map.

Preserving Open Space

In 2008, the Town Council adopted revised Planning, Acquisition, and Management Guidelines for Mansfield Open Space, Park, Recreation, Agricultural Properties, and Conservation Easements (Attached). These guidelines set standards to encourage sound transactions, proper documentation, and responsible stewardship for all Town-owned land.

In addition to the guidelines mentioned above, the Town uses open space acquisition criteria to assist in the evaluation of potential sites for additional preserved open space. All open space acquisition decisions are based on a comprehensive review of specific site characteristics, information contained or referenced in this Plan and information obtained through an active public notice and review process. The listed criteria are not weighted to help establish priorities. However, sites that address multiple primary categories or that would be of town-wide significance in addressing a goal or objective of this Plan have a higher priority than sites that address fewer primary categories or do not have Town-wide significance. It also is noted that land availability, acquisition costs and budgetary priorities also significantly influence open space acquisition decisions.

Open Space Acquisition Criteria are listed below.

We will need assistance updating these criteria so they are reference appropriate items in this plan. We will need assistance from Goody Clancy to see if these are comprehensive enough.—Should we changes these togoals and strategies...Let’s talk about how we want to use these.

1. Identified or specifically referenced as a potential conservation, preservation or recreational area within Mansfield’s Plan of Conservation and Development, the WINCOG Regional Land Use Plan or the Connecticut Policies Plan for Conservation and Development
 - Identified as a potential conservation area on Map 21

- Identified as within one of Mansfield's significant conservation and wildlife resource areas
2. Conserves or preserves historic or archaeological resources
 - Site is located within or adjacent to a Plan-identified village area (see [Map #5](#))
 - Site contains historic structures, sites or features including, but not limited to mill sites, cemeteries, foundations, stone walls (see [Map 2](#))
 - Site is a recorded archaeological site
 3. Conserves, preserves or protects notable wildlife habitats and/or plant communities
 - Site includes species listed by State or Federal agencies as endangered, threatened or of special concern (see [Map #11](#) for DEEP Natural Diversity Data Base data)
 - Site contains or helps protect vernal pools, marshes, cedar swamps, grasslands, waterbodies or other notable plant or animal habitats
 - Site is within a designated large contiguous interior forest area (see [Map #11](#))
 - Site includes a diversity of habitats
 4. Conserves, preserves or protects important surface or groundwater resources
 - Site is located within or proximate to a State-designated wellfield aquifer area, potential stratified drift wellfield area or existing public water supply well
 - Site is proximate to the Willimantic Reservoir or tributary watercourses and waterbodies
 - Site contains or is adjacent to significant wetlands, watercourses or waterbodies and acquisition will significantly help to protect the water resource
 - Site contains a flood hazard area
 5. Conserves, preserves or protects agricultural or forestry land
 - Site contains prime agricultural soils or agricultural soils of State-wide significance, (particularly important when in association with an existing agricultural use)
 - Site is located within an existing agricultural area such as the area in southwestern Mansfield along Mansfield City Road, Stearns Road, Browns Road, Crane Hill Road and Pleasant Valley Road
 - Site contains prime forestry soils (particularly important when located within a large contiguous interior forest area or within a site implementing a long-term forest management plan)
 - Site would provide a significant buffer for an existing agricultural use
 6. Conserves, preserves or protects important scenic resources
 - Site contains scenic overlooks, ridgelines, open fields, meadows, river valleys and other areas or features of particular scenic importance. (Information contained on [Map 12](#) should be utilized in considering relative scenic importance.)
 - Site contains significant roadside features such as specimen trees and noteworthy stone walls
 - Site abuts a Town-designated Scenic Road
 - Site is visible from existing roadways, trails and/or readily accessible public spaces
 - Site contributes to the scenic quality of one of Mansfield's historic village areas
 7. Creates or enhances connections
 - Site is located along the Willimantic River, Mt Hope, Fention, Natchaug, the Nipmuck Trail or other State-recognized greenway or a potential town-wide or multi-town greenway or trail system
 - Site would expand an existing park or preserved open space area and contribute to a continuous area of open space, protect a wildlife corridor, and/or provide a new trail access between open space properties or from existing roads or subdivisions to open space properties)

- Site would provide a new linkage from an existing or proposed residential neighborhood to an open space/park area, school or commercial area
 - Site provides a buffer area for existing trails
8. Creates or enhances recreational opportunity
- Site is physically suitable for future ballfields and other active recreational use
 - Site abuts an existing school, playground or active recreational site
 - Site provides new boating or fishing access to the Willimantic River or other significant watercourses or waterbodies
 - Site abuts or is within the watershed of existing outdoor public swimming site, such as Bicentennial Pond in Schoolhouse Brook Park
 - Site is located within or proximate to existing areas of higher-density/residential development

2. Stewardship of Open Space **opportunities, challenges**

As part of the Planning, Acquisition, and Management Guidelines for Mansfield Open Space, Park, Recreation, Agricultural Properties, and Conservation Easements, Town staff and volunteers develop management plans for each property. The plans describe the natural and cultural resources and describe short and long-term goals and objectives for each property. After review by appropriate advisory committees and abutters, the management plan is adopted by the Town Council.

The town relies on volunteers, such as UConn students, Eagle Scouts, the Alternative Incarceration Center, and advisory committee members for much of the maintenance and management of its network of open space, parks and preserves, and trails. In the future, the Town will need to allocate resources to improve trails, complete forest management, invasive species removal, and other tasks outlined in the management plans.

Private landowners hold most of Mansfield's open space, and their role is important to the maintain the benefits that open space offers. Landowners should be encouraged to understand the value and function of their lands. Best management practices for farms, forests and waterside land have been developed by various state and federal agencies. Informing landowners about these recommended practices would be a first step to ensuring that open space continues to protect natural resources.

STRATEGIES SECTION

Goal: Mansfield's open space and working lands provide the foundation for a healthy, environment, economy and quality of life.

Policy: Mansfield values, preserves and stewards its Town open spaces and working lands. Mansfield's private open spaces and working lands protect and enhance natural features.

Strategy: Promote understanding and enjoyment of local and regional agriculture and natural systems.

Actions:

- Increase visibility of local/regional agriculture (sample actions from YW actions list) Events on farms and farmers at market to provide personal agricultural experiences. Increase number of agritourism venues.
- Promote agricultural experiences for the public (sample actions from YW actions list)
- Share information on agriculture-related town policies, activities, products and experiences. (sample actions from YW actions list)
- Town staff and officials are engaged and educated about the impact of their decisions on agriculture.

- Actions related to agricultural soils and natural systems (forests and other plant communities, water features, wildlife) are in the Natural Systems chapter.

Strategy: Promote understanding and enjoyment of parks, greenways, historical sites and scenic features.

Actions:

- Continue to sponsor/cosponsor recreational activities in parks and preserves and in developed areas.
- Encourage public enjoyment of scenic views with events and features, such as a “view trail” bike ride from Horsebarn Hill to Chestnut Hill.
- Actions for historical sites are in the Historical chapter???
- Consider developing a Nature Center--Currently, the Town has two sites that would be appropriate. When the Town purchased the Moss Sanctuary, a 4-acre development envelope was designated for a Nature Center. This would provide easy access from UConn and EO Smith High School. In addition, the Bicentennial Pond Recreation Area, which is immediately adjacent to the Mansfield Middle School, would be an appropriate location.
- Use technology to increase awareness about trails, local and regional open spaces and working lands. Smart phone apps, QR codes, an updated website should be used to communicate to the public.

Strategy: Continue to pursue preservation of open space and working lands.

Actions:

- Support tax policies to encourage conservation of privately owned open space by adding the open space category to Mansfield’s PA 490 program.
- Continue and fund Mansfield’s Open Space Acquisition Program through municipal bonding referendums, state, federal and other grants.
- Encourage Town, State, and Federal Officials, including UConn to identify and permanently preserve important natural, historic, agricultural and scenic resources.
- Continue to evaluate Town acquisition of open space either in fee or easement by using and improving Mansfield’s Open Space Acquisition Priority Criteria.
- Continue to develop effective local, regional, state, and federal partnerships to protect and steward open space and working lands of significance.
- Consider consulting with the Land Trust Alliance in updating standards for acquisition, stewardship, and management.
- Involve and inform the public--Involve citizens in planning and management of open space and working lands. Collect, maintain, and distribute up-to-date information about publicly owned open lands, including maps, reports on the conservation values and current conditions and reports on the management needs of local and regional open lands.

Strategy: Mansfield continues to protect scenic views

Actions

- Ensure development proposals continue to avoid adverse Impacts on scenic views and even enhance views to be enjoyed both within and outside of a developed area.--Mansfield’s subdivision regulations allow flexibility for siting buildings within a building area envelope in order to preserve significant features including scenic

resources and views and vistas. For other projects not in subdivisions, the planning staff, as well as the Planning and Zoning Commission, will work with applicants through the design review process, in order to arrive at plans that sensitively preserve Mansfield's scenery by siting structures or features in such a way that significant views and vistas are preserved. Such matters as lot size, building heights, and the location of buildings or features on the site will be considered. Include map of Scenic Resources and Glossary from 2006 POCD? Or just refer to them?

Strategy: Mansfield stewards its public land and water resources using the best available scientific research as the basis for sound conservation and management decisions and to enhance public benefits.

Actions:

- Support private landowners to have environmentally, socially, and economically balanced stewardship goals (i.e., forest stewardship plans, waterside buffer management plans, invasive species management).
- Continue to develop and implement management plans for all Town, parks, preserves and natural areas.
- Develop and fund a process for improved stewardship of Town parks, preserves and natural areas.
- Continue to foster partnerships with UConn, the Alternative Incarceration Center, Eagle Scouts, Joshua's Trust, E.O. Smith High School, and other organizations to leverage resources for stewardship of open space and working land.
- **Develop a robust volunteer stewardship program-** Joshua's Trust, neighboring towns, and the Land Trust Alliance have guidelines and models for developing volunteer stewardship programs. Mansfield staff supervises several volunteer workdays per year with numerous community groups such as UConn's Community Outreach Program, the Eagle Scouts, E.O. Smith High School, the Mansfield Mustangs, and groups who are required to do mandatory community service through the court system. This program requires extensive staff oversight. Methods for making a stand-alone volunteer program should be assessed. Online trail maintenance requests should be developed. Individual property stewards should be trained to conduct volunteer projects so that staff oversight is limited.

Strategy: Actively collaborate in regional initiatives to promote open space preservation and stewardship.

Actions:

- Sponsor/co-sponsor regional events and cooperative projects to promote preservation and stewardship of private land.
- Participate in greenway projects, regional compacts and other cooperative efforts to protect and steward open space.
- Support regional watershed protection initiatives and advocacy.
- Work with federal, state, regional, and local organizations to promote open space initiatives. Some of these organizations include: The Last Green Valley, Eastern Ct. Resource and Development Area, Inc., Eastern CT Conservation District, USDA Natural Resource Conservation Service, UConn Extension System, Ct. DEEP.

Strategy: Ensure that a range of high quality parks, preserves, trails and greenways are available according to the needs of the population (age, demographics, accessibility levels, and location).

- Expand Trail system so that people at all levels of accessibility and at all stages of life have opportunities to connect with nature.
- Seek funding for accessibility improvements at existing parks.
- Identify parks that would be appropriate for biking.
Traditionally, Mansfield has allowed biking at only one park, Schoolhouse Brook Park. A committee should be established to evaluate parks that would be appropriate for biking and to develop strategies to minimize conflicts with other uses.

Policy: Mansfield’s land use policies and regulations support and enhance our open space areas.

Strategy: Refine and expand regulations and development review processes to protect natural systems and farms.

Actions:

- Implement Natural Resources Protection Zoning.
- Update conservation subdivision regulations and consider requiring this type of subdivision for all subdivision applications.
- Revise common driveway regulation so that it is not used as an inexpensive way for developers to develop back acreage. Require house lot frontage on existing town roads or on a proposed town road, not on a shared driveway.
- Continue to require a streamlined preliminary review so developers meet with committees before the public hearing process begins, require more information about surrounding land use and potential connections, and include specific expectations such as preserving natural buffers along road frontage.
- Work with DEEP to provide information about implementing community septic systems to promote cluster development.
- Identify and protect natural systems in Planned Development Areas.
- Create subdivision regulations to provide buffer abutting agricultural operations.
- In areas of prime farmland soils or interior forest, establish special design standards that protect a maximum amount of these resources.
- Prohibit use of invasive species
- Adopt watershed and aquifer protection regulations/zones to prevent incompatible development and uses.
- Amend regulations to provide additional protection for stonewalls.
- Encourage or require new development to reduce the amount of impervious surfaces.
- Examine regulations to minimize the need for impervious surfaces.
- Consider a septic management ordinance.
- Consider Transfer of Development Rights (TDR) to shift development to areas that are more suitable for development.
- Continue to advocate for relocation of University’s Main Accumulation Area (MAA) to site outside of drinking supply watershed
- Amend zoning and subdivision regulations to include mandatory and incentivized water conservation measures.
- Identify mandatory measures as well as incentives for multi-family residential projects.
- Review and revise regulations, policies and incentives to protect agricultural land and operations.

Some of these repeat what is in the natural systems chapter.

Potential visuals for Mansfield open space section: Include the following in this section or refer to items located elsewhere in POCD.

Open space map (decide which layers to include), Farmland map, Interior forest map, Protected open space map (indicate which Town lands are permanently protected as of now), Proposed zoning map (RAR90 and planned development areas)

DRAFT

Part II. Natural Resources, Green Systems, and Sustainability

Chapter 4: Natural Systems

A. Goals and Policies- See below.

B. Findings and Challenges

Mansfield is 45 square miles (29,180 acres) in size and varies in elevation from about 750 feet above sea level in the north-central portion of town to about 150 feet above sea level on the Natchaug River at the Windham town line.

Mansfield is fortunate to have relatively healthy natural systems that are highly valued by its residents. Without healthy natural systems, the Town's ability to prosper economically and to be a livable community is limited.

Our natural resources are located primarily in "Open Space" (undeveloped land, see Chapter 5). Open space comprises the greatest acreage in town (75% of the land base). Preservation and stewardship of open space is essential to maintaining the benefits of our natural resources. However, balancing a meaningful system of open space with thoughtful development will most likely be the challenge as the Town grows. Stewardship and maintenance of Mansfield's open space, preserves, and natural areas will continue to require human and financial resources. Because much of Mansfield's natural systems are privately owned, encouraging these owners to engage in appropriate stewardship practices will be key to ensuring that Mansfield's natural systems remain healthy. Additionally, private landowners will need to see economic value in their open land or there will be pressure to develop it. Using and incentivizing sustainable development practices in Mansfield's built landscape is also critical to maintaining our healthy natural systems.

C. What the Community Said

In a visioning survey conducted as part of the Mansfield Tomorrow Project, over 95% of the approximately 400 respondents supported the following goal from the Mansfield's 2008 Strategic Plan - either as written or with refinements: "By 2020, Mansfield's cultural history together with its woodlands and open spaces will remain an integral part of the Town's character providing abundant wildlife habitat, scenic views and inviting recreational opportunities."

While people were very supportive of this goal, there were also many individual comments that stated that Mansfield needed to balance preservation and growth, better manage its existing natural areas. There was also concern over the impact of UConn's growth on Mansfield rural character and natural systems.

- *Attractive, clustered, denser housing and neighborhoods, sidewalks and bicycle paths are actually part of any good plan to preserve open spaces that support wildlife in the town.*
- *Balancing our town's character with business tax revenues is critical.*
- *I agree with this statement but I don't want it to become the reason for limiting some new development. I am thrilled that there are interesting places to eat now.*

- *Preservation of our good water supply*
- *It [Mansfield] must conserve its natural resources and natural areas or the quality of life will plummet.*
- *The Town should [have] a vision of harmony with nature and include this in all aspects of decision- making*
- *I love that Mansfield offers open spaces, etc, in combination with cultural resources. This is critical to our decision to live here.*
- *One goal should be to strive for interconnected open spaces rather than isolated islands of open land.*
- *With all the projects UConn has underway, e.g., the Tech Park, open space is going to come under increasing pressure unless there is a plan to compensate for this.*

Current Conditions

Mansfield's healthy natural systems are the foundation upon which Mansfield has developed--culturally, historically and economically and influence where we live, work, and play today. Our natural resources include forests and other plant communities, farmland, water features, wildlife and aquatic species, air quality, unique environments, and scenic resources. They are some of our greatest assets.

Mansfield's Landscape: River valleys, uplands and a basin

Mansfield scenic landscape features three river valleys, two upland areas and part of the Willimantic Basin (see map). The Willimantic River valley follows the Town's western boundary with Coventry. The Natchaug River watershed lies mostly east of Route 195. It includes the Fenton River and Mount Hope River valleys, which flow into the Natchaug River at Mansfield Hollow Lake.

A large upland divides the Willimantic River watershed from the Natchaug River watershed. It extends south from Four Corners through the University campus to Chestnut Hill. A smaller upland lies between the Fenton and Mount Hope Rivers and extends from the Town's northeast corner to Coney Rock. The south ends of these uplands drop steeply into the Willimantic Basin, with dramatic ledges that offer views of Mansfield Hollow from 50-Foot Cliff and Coney Rock, and of the Sawmill Brook valley from Wolf Rock. The Willimantic Basin is a large valley shared by several towns. The first Mansfield settlers were attracted to the Basin and established Ponde Place (now Mansfield Center) in the late 1600's.

Mansfield's land cover has changed dramatically over the last 300 years. The forest encountered by European settlers was gradually cleared for farming and for forest products. By the mid 1800's, 70% of the land was open. As farmers moved west to better lands, trees began to reclaim the fields. Today, Mansfield is 60% forested and 10.4 % farmland.

Refer to Map #13 Land Cover

What has not changed are significant water resources (see below) and glacial features. Glaciers have smoothed the uplands into rounded hills and filled our river valleys and the Basin with eroded materials, which provide level farm fields and deep sand/gravel deposits (aquifers) that store rain water. The most recent glacier scoured Mansfield between 20,000 and 15,000 years ago. As a mile-thick ice sheet slid southward, it smoothed high points, creating drumlins, such as Horsebarn Hill, and it plucked at bedrock, creating cliffs, as at 50-Foot. When the glacier melted, it left temporary blocks of ice that are now deep depressions in the earth (kettleholes) as at Bradley-Buchanan Preserve. The glacier also left

behind rocky soil and glacial monuments, including large boulders (erratics) as at Wolf Rock, and narrow ridges (eskers), as at the Torrey Preserve.

Refer to Map # 8 Glacial Surface Features

Mansfield's landscape has influenced our community's activities and features. The main roads follow ridgelines or river valleys. Residential areas originally were established along these main roads, but automobile travel has encouraged subdivisions throughout the town. Commercial areas are also found along the main roads: Four Corners, Storrs Center, Mansfield Center, and the Southeast area. The three river valleys once featured water-powered mills. Today, small mill villages remain, but the river valleys are mostly in a natural state and offer significant opportunities for hiking, fishing and boating. State-designated Greenways extend along all of these rivers, and promote recreation and preservation.

Soil

Mansfield has a range of soil types. Very well drained soils are found in glacial deposits of sand and gravel. Poorly drained soils are in wetlands or on hilltops that were compressed by glaciation. The type of soil influences the use of the land. Plant and wildlife communities usually are associated with moist or dry areas. Because of suitability for septic systems, areas with well drained soils are more developable. Mansfield contains x% of wetland soils, which do not easily support development. A wetland soil is defined as a poorly drained or floodplain (alluvial) soil. The many areas of wetlands and steep slopes in Mansfield impose a limit on the amount of land suitable for development.

Agricultural and civilizational success relies on soils suitable for crops or pasture. About 58% of Mansfield consists of either prime, statewide, or locally important farmland soils (see farmland soils map). These soils are often suitable for both agriculture and development; causing pressure on agriculture. Farmland soils are scattered throughout town on hilltops, in river valleys and in the Willimantic Basin. The largest area is in southwest Mansfield. Some prime soils are cropland, others are forested. *Mansfield Agriculture Strategy*, by Yellow Wood Associates in 2013, provides a detailed report on our farmland.

Soil is an important contributor to filtering and storing ground water. Rainwater and septic system leachate both interact with chemicals in the soil, creating cleaner groundwater. This hidden resource supplies water to our wells and drains into our rivers and lakes. Preventing erosion of soil helps keep farmland intact and avoids pollution of waterways with sediments.

Water Resources

Mansfield's has a variety of water features. Surface water features include lakes, ponds, rivers and streams, swamps and marshes and vernal pools. These provide a healthy habitat for wildlife and scenic areas, but they restrict locations for development and agriculture. Below ground are water storage areas in bedrock and in sand/gravel aquifers, which provide water to both public and private wells.

Larissa- we will have to work on a water resources map(s).

Surface Water

Mansfield contains part of two major watersheds. The Willimantic River watershed on west side has a waste receiving stream. It contains the UConn sewage treatment plant outfall at the Eagleville Dam. The Natchaug River watershed on east side, including the Fenton River and Mt. Hope River and their

tributaries, is a public water supply watershed for Willimantic Water Works Reservoir. Both of these watersheds contain complex networks of secondary streams, lakes, ponds, rivers and swamps and marshes and vernal pools. According to Mansfield's 2003 Lands of Unique Value study, "wetlands, watercourses and water bodies cover 27.2% of the town and, when a 50-foot buffer is added, the percentage increases to 37.8%." **include map of surface water features.**

Mansfield's vast surface water resources convey surface drainage and help prevent flood damage by providing flood storage capacity. They also support diverse biological life, protect wildlife and fish habitats, trap sediments, retain nutrients and help protect groundwater quality. Additionally, these areas provide educational, scientific and recreational benefits and add to Mansfield's visual and aesthetic character. Many significant archaeological sites, including dams, mills and Native American campsites are located along watercourses and water bodies.

Water quality is high in most of Mansfield's rivers, streams, lakes and ponds. In the Willimantic River, water quality has significantly improved since 1970 due to reductions in industrial pollution and improvements in sewage treatment plants. Aquatic life in Eagleville Brook is being restored through projects to reduce surges of stormwater from the UConn campus and surrounding development in Storrs based on the 2007 Total Maximum Daily Load (TMDL) study that identified impervious cover as the primary cause of the water quality impairment.

The greatest threat to surface water quality in the Mansfield is nonpoint source pollution from a wide array of sources, including commercial, residential, and agricultural sources. Storm water runoff from agricultural nonpoint sources, residential fertilizers, pollutants and sediment collecting on impervious surfaces, and other sources, transport nutrients, bacteria and sediment to streams and ponds. Excess nutrients in surface water cause algal blooms and low dissolved oxygen making them less suitable for fish and other organisms. Most Connecticut rivers and streams are currently classified as impaired for excess bacteria. Ct. DEEP is initiating a program to assess the causes of these high bacteria counts and to determine actions to reduce the bacteria load.

Non-point source pollution can be mitigated by Riparian Buffers. Any land that runs along a water body (stream, river, lake, wetland, etc.) is known as a riparian area. A riparian area managed to moderate the effects of adjacent land use is called a riparian buffer. These vegetative buffers are critical because they are the site of an intersection between a natural system (a water body) and a human-based system (residential, agricultural, or industrial). Buffers are often the first line of defense against the impacts of impervious surfaces (driveways, streets, parking lots, patios, roofs, etc.) by filtering pollutants and slowing runoff. They also protect shorelines from erosion, aid in flood control, provide habitat for wildlife, shade waters for fish, and offer scenic value.

Mansfield's increased demand for water from surface and groundwater sources combined with the future uncertainty of climate change may negatively impact the supply of water because of changes in precipitation and drought patterns. Increased development (impervious surfaces such as roofs and parking lots) leads to increased rainwater runoff and its velocity, more severe flooding events, and less groundwater recharge. The lack of a regional watershed advocate is a challenge in communicating conservation issues.

Flood Hazard Areas (Not sure this belongs here?)

Since 1974, Mansfield has been an active participant in the National Flood Insurance Program. Prior to this date, Mansfield had adopted zoning regulations to prevent new development in areas subject to flooding. In 1980, the United States Geological Survey completed a Flood Study for Mansfield and prepared Flood Hazard Area maps (effective 1/2/81) for the town. Engineering cross-sections with precise flood elevation data were prepared for the Natchaug, Willimantic and Mount Hope Rivers and a portion of Conantville Brook. Flood hazard areas, using approximate methods for delineation, were designated along the Fenton River and along Cedar Swamp, Eagleville, Fishers, Nelsons and Sawmill Brooks. Additional areas along smaller watercourses and wetlands also are subject to flooding, but are not depicted on the Town's Flood Insurance Program flood mapping. All designated flood hazard areas have been classified as flood hazard zones on [Mansfield's Zoning Map](#) and are within proposed open space conservation areas as depicted in this Plan of Conservation and Development. Mansfield's Planning and Zoning Commission has adopted and, as necessary, revised zoning and subdivision regulations to remain an active participant in the National Flood Insurance Program. [Insert map of existing flood hazard areas and 500 year flood as identified by WINCOG]

It is Mansfield's land use policy that, to ensure the health and safety of Mansfield residents and to help prevent flood-related losses to life or property, no development should take place within areas subject to flooding. As a noted exception to this policy, it is recognized that a limited number of uses may be appropriate, provided a comprehensive special permit review determines that new structures would be flood-proofed to withstand a 100-year storm; that no detrimental upstream or downstream flood impacts would arise, and that all other special permit criteria have been met. Buildings and uses that may be authorized should be limited to low-intensity agricultural and horticultural uses, recreational uses, hydropower facilities, parking areas, sand and gravel operations and buildings and uses accessory to existing uses. In reviewing any recreational or hydropower facility, consideration also must be given to traffic, noise and other potential neighborhood or environmental impacts. Except for authorized hydropower facilities, under no circumstances should any new structures or fill be placed within "floodways." Floodways are defined by the National Flood Insurance program as "the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood elevation without cumulatively increasing the water surface elevation more than one foot."

Wetlands

Compared to many towns in eastern Connecticut, Mansfield is unique in terms of the amount and location of wetlands. As noted above, approximately 27.2% of the town's land area is comprised of wetlands, a percentage that is much higher than the adjacent communities of Windham (16.3%), Coventry (19%) or Willington (13%). The even distribution of wetlands across the town is also unique; most communities have distinct areas of wetlands.

Through the provisions of Sections 22a-36 to 22a-45 (inclusive) of the Connecticut General Statutes and through the adoption of local regulations, the Mansfield Inland Wetland Agency currently requires permits for all land use activities in a wetland, watercourse or water body or within 150 feet of a wetland, watercourse or water body. The Agency has the right to regulate any land use that may impact a wetland, watercourse or water body, and uses this 150-foot regulated area to help identify potential impacts.

Groundwater

Mansfield's quality of life is associated directly with the quality of drinking water available in town. A majority of Mansfield residents obtain their drinking water from the groundwater. Wellfields along the

Willimantic River (north of Route 44 and west of Route 32) and along the Fenton River (north of Gurleyville Rd.) supply potable water to the University of Connecticut and adjacent areas. Except for some southern portions of town that are supplied water from the Willimantic Reservoir, all other Mansfield residents, including many residents in multi-family housing developments, obtain their potable water through smaller wells. Many of these wells are classified as public drinking water supplies by the State Health Department. Drinking water is derived from both bedrock and glacial deposits (till or stratified drift) atop the bedrock. Although all of these sources function as aquifers, stratified drift deposits, which are typically located along river valleys and the adjacent hillsides, are usually referred to as a town's aquifer areas, due to their high yield potential. For all bedrock wells, the yield and quality of the water supply is influenced by the type of underlying bedrock.

There are three stratified drift deposits that are significant sources of potable water. These three areas are located along the Willimantic River Valley, along the Fenton, Mount Hope and Natchaug River Valleys, and in the Pleasant Valley Road area.

Mansfield's Planning and Zoning Commission has long recognized the importance of protecting ground water quality and the town's stratified drift aquifer areas. Approval criteria for site plan and special permit applications emphasize groundwater protection, and specific performance standards have been established for all activities within the town's stratified drift aquifer areas. The Mansfield Planning and Zoning Commission acts as the town's Aquifer Protection Agency and has the responsibility to implement State requirements within defined Level A aquifer areas proximate to UConn's two wellfields.

Water Supply Watershed

Approximately one-half of the town of Mansfield (mostly east of Route 195) is situated within the watershed boundaries of the Willimantic Reservoir. The reservoir is the source of potable water for approximately 25,000 persons in Windham and southern Mansfield. The reservoir has a large watershed with unused service capacity, and water service could be extended to additional users in the future. State, regional and local municipal land use plans have placed a high priority on protecting surface and ground water quality within the entire Willimantic Reservoir watershed. Protection of the Reservoir watershed will help ensure a good supply of potable water at low public cost for residents of Windham, Mansfield, and, potentially, other towns in our region. More information about the Willimantic Reservoir can be found in the Town of Windham's Water Supply Plan, which was updated in 2004.

Vegetation

Forests

More than half of Mansfield is forested. Trees and forests are critical to the Town's health, environment and economy. They protect water quality and quantity, improve air quality, provide wildlife habitat, forest products, carbon sequestration, and recreation and tourism opportunities. In addition, private forest tracts usually provide more tax revenue than they cost in Town services. These benefits are partly dependent maintaining large tracts of unfragmented forest (Hochholzer 23). When forests are developed for housing or other uses, the fragmentation cannot easily be reversed. Thus, the economic and environmental benefits are permanently lost.

Forests are important to our water supply. They act as natural reservoirs, treatment plants, and stormwater management systems. By filtering rainwater and releasing it slowly, forests retain pollutants and provide a steady flow of groundwater to our rivers, reservoirs, and wells. They also help prevent erosion and flooding by surface runoff. Forests produce clean water at a fraction of the cost of

water treatment plants (Foster 4). A case in point: New York City has invested millions of dollars in forest preservation in its water supply watershed in the Catskills, thus avoiding more expensive water treatment costs. (Mark Tercek, *Nature's Fortune*, 26). As Mansfield investigates the possibility of a public water supply, the role of forests in keeping water treatment costs low should be considered.

Forests renew our air supply by absorbing carbon dioxide and producing oxygen. Trees also improve air quality by intercepting airborne particles, and by absorbing ground-level ozone, carbon monoxide, sulfur dioxide, and other greenhouse gases.

Forests contribute to the Town's rural character. They provide a wide range of nature-based recreation and tourism opportunities (hiking, hunting) and wildlife habitat. Local forest products include lumber and maple syrup.

In the mid-1850's, 70% of Connecticut was deforested (Wildlands and Woodlands). Early settlers cleared the landscape for farming leaving only the steepest slopes and the wettest swamps (LOUV p. 3.10). Since then, forests have reclaimed the land—oak and hickory in dry areas, maple and ash in moister soils, and red maple in swamps. Today, approximately 65% of the Town is covered by forest, and the remaining is a combination of cleared farm lands, open water, roadways and other types of development (UConn's Center for Land Use Education and Research, CLEAR).

No old growth forests remain in Mansfield. Most trees in Connecticut are between 60 and 100 years old, so there is not a good balance of tree age classes (Ct. DEEP Forest Action Plan). Special forest habitats in Mansfield include Atlantic white cedar swamps, mature pine stands and old oak areas. Several large forest tracts in Mansfield qualify as "interior forest" with 200 or more contiguous acres of unbroken forest. (CLEAR) (see map in conference room). These tracts are essential to wildlife that requires deep forest, and they provide the most benefit to water and air quality.

Our forests continue to change: deer are browsing tree seedlings, except red maple and black birch. This will favor these trees as the next generation of forest. In addition, non-native trees, such as Norway maple, compete with native trees for space and sunlight. The forest understory has increasingly become dominated by other non-native invasives, such as Japanese barberry, winged euonymus, and bittersweet. These suppress tree seedlings and native shrubs that support forest wildlife.

Some forest areas are publically owned, but few of these lands are permanently preserved. The Town owns approximately 2,500 acres of forested land. UConn owns 900 acres of forest. Mansfield Hollow (federal land) has 1726 acres, mostly forested. Privately owned forest lands that are temporarily preserved by 490 tax status encompass XXXX acres.

(Include forest map from conference room)

Other Plant Communities

The Town's diverse landscape includes other vegetation types. Grasslands, such as old agricultural fields, pastures and hay fields, have declined with the resurgence of forest in last 100 years. Wildlife dependent on these areas have likewise declined. Wetland plants (in swamps and marshes) and aquatic plants (in flowing and quiet waters) provide food and shelter for a wide range of wildlife and aquatic species. Like forests, these plant communities protect water quality and quantity, and provide nature-based recreation and tourism opportunities (hiking, fishing, boating, and hunting). Plant communities are impacted by invasive plants, deer browsing, and by stormwater runoff that floods or

pollutes these areas. Low Impact Development techniques would help to prevent stormwater impacts on these plant communities and maintain their benefits to people and to wildlife.

Non-Native Invasive Species

Invasive species have been mentioned in several sections above. An increasing threat to healthy, diverse habitats is non-native invasive plant and animal species. Invasive plant and animals crowd out native species. In addition, the presence of invasive plants and animals alters the way plants, animals, soil and water interact within native ecosystems, often causing harm to other species and reducing ecosystem diversity. Invasive species have the ability to reproduce rapidly under a variety of site conditions and lack the natural controls on growth and reproduction that would be found where an invader is native. Thus, they present a rapidly growing threat to the plants and wildlife in our forests, wetlands, and waterways. Additionally, invasive species can have economic, safety, and health impacts. Invasives along roadsides can block site lines and road signs and damage roadside causing safety hazards. Researchers have recently shown that the larger the population of Japanese Barberry in an area, the larger the number of Lyme disease carrying ticks.

In 2004, after briefing the Town Council, Staff adopted a non-native species policy. This policy states that the Town shall include the development and implementation of an invasives control plan in Town properties' land management plans, train staff and volunteers in control methods, and apply to selected sites, educate residents about the invasives problem and work with other groups concerned with invasives control.

Wildlife and Aquatic Species

Mansfield's wildlife and aquatic life is typical of southern New England. Changes in plant communities have affected the species that can live there. Meadowland and forest edge species have declined as forests have reclaimed farmland. On the other hand, species of deep forest have benefited from the current expanses of interior forest, including bobcats and recently reinstated species: wild turkeys and fishers. The return of forest cover has promoted an overpopulation of white-tailed deer. These in turn are impacting the future of the forest habitat for themselves and for other forest wildlife by heavy browsing of tree seedlings and native shrubs. The high deer population also contributes to Lyme Disease cases and to vehicle collisions. Mansfield would benefit from a Ct. DEEP deer management program, which is available to some Connecticut towns. Development has encouraged wildlife that is adapted to human presence and hard surfaces, such as raccoons, opossums and feral cats.

Because the Town's wetlands and water features have remained stable, so have the aquatic species living in them. The Willimantic and Fenton are designated major trout fishing rivers. Over the years, these rivers have been overfished. Currently, Ct. DEEP stocks trout in the Town's three rivers.

Rare species and Unique Habitats

Mansfield's unique habitats include white cedar swamps, a leatherleaf swamp, and old white pine groves. The Mansfield Planning and Zoning Commission requires that applicants use the Natural Diversity Data Base Maps, developed by the CT DEEP, to determine if their proposed development may have a potential impact on a species on the state's list of rare, endangered, and threatened species.

Sources

Hochholzer,

http://www.ct.gov/deep/lib/deep/forestry/assessment_and_strategy/assessment__strategy.pdf

Foster,

http://harvardforest.fas.harvard.edu/sites/harvardforest.fas.harvard.edu/files/publications/pdfs/HF_WandW.pdf

Tercek, Mark and Jonathan Adams. Nature's Fortune: How Business and Society Thrive by Investing in Nature, New York: The Nature Conservancy, 2013 (Published by Basic Books)

Wildlands and Woodlands,

<http://www.wildlandsandwoodlands.org/sites/default/files/Wildlands%20and%20Woodlands%20New%20England.pdf>

LOUV, http://www.mansfieldct.gov/filestorage/1904/1932/2043/louv_report.pdf

CLEAR-Center for Land Use Education and Research <http://clear.uconn.edu/>

<http://clear.uconn.edu/projects/landscape/your/town.asp?townname=78&Go=Go>

Goal- Mansfield's soil resources provide necessary ecosystem services and support a growing agricultural economy.

1. *Strategy Mansfield staff and residents are educated about the environmental, health, quality of life, and economic benefits of healthy soil resources.*

Actions

- Host workshops and educational events about the importance of soil resources, such as prime agricultural soils.
- Partner with regional, state, and federal agencies to promote soil health (i.e. Soil health workshops with NRCS) to develop educational campaigns on soil health, benefits to soils by low impact development and green infrastructure.

2. *Strategy- Mansfield protects and stewards its prime, statewide and locally important, agricultural soils*

Actions

- Continue to preserve important farmland soils through the Town's Open Space and Farmland Preservation fund, CT Department of Agriculture's Purchase of Development Rights program and Community Farms Preservation Program, Federal Programs and CT DEEP Open Space Acquisition Programs.
- Continue to require that lessees of Town Agricultural Land follow good stewardship practices, such as planting cover crops, edge management, and soil testing. In January of 2013, the Mansfield Town Council adopted the Agricultural Land Usage Agreement Policy. This policy should be reviewed periodically to encourage use of the best available stewardship practices.

Goal-Mansfield's water resources provide high quality drinking water, aquatic habitat, recreational, and aesthetic benefits.

Policies

- Support efforts to better manage water resources
- Discourage inappropriate uses and development in critical water supply areas and habitats

STRATEGIES

- A. Encourage the use of sustainable development and management practices to reduce impacts on groundwater resources**

Actions

- 1. Improve water infiltration through innovative storm water management techniques**
Use of Green Infrastructure and Low Impact Development (LID) techniques to reduce effective impervious surface can help to improve water infiltration and reduce the need for structural stormwater systems. Common examples include rain barrels, rain gardens and integration of the stormwater and landscape systems. New development should be required to maintain the pre-development hydrology of the site to the maximum extent possible using green infrastructure practices.
- 2. Reduce the amount of new impervious cover created through development**
As evidenced by the Eagleville Brook TMDL study, impervious cover can have significant detrimental impacts on water quality. Revisions to land development regulations should include a focus on reducing the amount of impervious surfaces in new developments through use of techniques such as permeable surfaces, narrower road cross sections, impervious cover limitations and reduced parking standards. Reductions in impervious cover should also be encouraged for retrofits/renovations to existing developments.
- 3. Reduce water usage during dry periods**
The University of Connecticut monitors stream flow in both the Willimantic and Fenton Rivers and implements voluntary and mandatory conservation measures when certain thresholds are breached. The Town should consider adopting water conservation policies and ordinances using those triggers for public water supply customers, and encouraging users of private and community water supplies to implement voluntary conservation measures based on those trigger points.
- 4. Develop Best Management Practices (BMP) manual for landscapes and hardscapes**
Zoning regulations currently require developers in designated aquifer areas to prepare landscape and stormwater management plans that identify provisions for reducing use of pesticides, herbicides, deicing materials and other practices that have the potential to impact water quality. Development of a BMP manual would simplify the process; regulations should be revised after completion of the manual to require developers to identify which practices will be used in their development. Consideration should be given to requiring these practices town-wide instead of limiting to aquifer areas.
- 5. Promote use of native vegetation and low-water use/drought resistant plants**
Use of native vegetation and multi-functional landscapes can help to reduce water usage and ensure that plants can withstand drought conditions. Updates to landscaping regulations and development of a brochure of appropriate plants for different landscape types would help to promote such an approach.
- 6. Encourage water reclamation and reuse**
Use of rain barrels and greywater systems can reduce water usage for irrigation, offering water conservation and infiltration benefits. At a larger scale, UCONN's reclaimed water facility provides similar water conservation benefits. Where possible, the town should work with the

University to allow for connection of large new off-campus projects to the reclaimed water facility.

7. Consider adoption of a septic system management ordinance

An ordinance requiring mandatory inspections and maintenance protocols for high-risk land uses such as multi-family housing developments, restaurants and other uses which discharge non-domestic wastewater would help to detect and remediate system failures before they become a public health issue or contaminate groundwater sources

B. Encourage stewardship and management of water resources through community education and awareness

Actions

1. Promote best management practices through brochures and educational programs

Continue to provide information to landowners about the importance of reducing the use of pesticides and fertilizers, increasing runoff infiltration, creating backyard habitats, and water conservation. Direct people to existing tools and resources

2. Develop a water conservation educational campaign

Work with local conservation organizations and public water utilities to develop an educational campaign promoting water conservation at all levels. Such a campaign could include identification of existing tools/resources, voluntary water conservation pledges, apps to calculate a 'water budget' and show impacts of how changes in fixtures can increase/decrease water usage - (<http://waterbudget.sustainablesources.com/>) and changes in cost for public supply customers; neighborhood competitions, school programs, etc.

3. Encourage Riparian buffers

Work with regional, state and federal organizations (*CT Non-point Source Education for Municipal Officials (NEMO)*, *USDA, NRCS, CT DEEP, CT Conservation Districts, etc.*) to develop educational campaigns *regarding the importance of riparian buffers and how to create and maintain them.*

C. Promote conservation of water resources through incentive programs

Actions

1. Encourage local water utilities to provide rebates for installation of water efficient fixtures

The EPA's WaterSense® program includes certification of water-saving fixtures including toilets, showerheads and various appliances such as dishwashers and washing machines. Provision of financial rebates or incentives by local water utilities would help to encourage property owners to replace older, less efficient fixtures as well as installation of higher efficiency fixtures in new construction.

2. Consider density bonuses for use of sustainable design practices
Sustainable design/Low Impact Development practices such as green roofs, permeable pavement and greywater systems have tremendous environmental benefits, but can be cost prohibitive depending on the application. Incentives such as density bonuses could help to offset the additional cost.

3. Identify property tax incentives for creation of permanent conservation easements
Need answer from Irene.

4. Develop incentives for preserving greater amounts of open space in development
Current regulations limit the amount of land that can be required to be preserved as part of a development proposal. Regulations that encourage greater clustering of development as well as other incentives for preservation of greater areas should be considered.

D. Advocate for stronger water resource protection policies and programs

Actions

1. Encourage UCONN to permanently preserve important watershed lands east of Storrs Road
UCONN owns hundreds of acres in the Fenton River Watershed, including the Fenton Forest and Horsebarn Hill. These lands provide tremendous natural as well as scenic value. While the East Campus Master Plan identifies many areas for conservation and preservation, this plan does not provide permanent protection. The Town should encourage UCONN to adopt more permanent protections such as conservation easements held by a third party such as the Town or Joshua's Trust.
2. Develop a comprehensive strategy to protect all Town aquifers
The State's aquifer protection legislation protects only those areas that have been already subjected to Level A mapping (the University's aquifers), leaving most of Mansfield's aquifers unprotected. The Town has included aquifer protections in its subdivision regulations, but these regulations should be updated and extended to include any building or development in an aquifer area. Mansfield's aquifers fall into two categories, stratified drift and bedrock aquifers. For the stratified drift aquifers, the 500 foot setback/regulated area (in parallel with Mansfield wetland regulations) should be utilized throughout Mansfield. Determine if EHHD codes provide sufficient protection for bedrock aquifers.
3. Pursue grant funds for protection of water resource areas
To facilitate protection of sensitive water resource areas, the Town should pursue grant funding when available for projects such as acquisition of land and conservation easements within the drinking supply watershed and aquifer areas as well as watershed planning grants.

E. Foster sustainable development through land use policy and regulation

Actions

1. **Consider additional protections for water resource areas**
 2. Strengthen the Inland Wetland Agency policy of regulating all proposed land uses proximate to a wetland or watercourse.
The existing 150-foot regulated area should be retained and, as appropriate, extended for more significant wetland systems. Larger buffers should be considered for commercial developments and subdivisions where cumulative impacts may result in more significant impacts.
 3. Revise zoning regulations to include water conservation techniques for high water uses
While the International Building Code regulates the types and efficiencies of fixtures that must be installed, there are other techniques that could promote water conservation by high water users. For example, requiring individual unit water meters for new multi-family residential projects would allow for individual tenant billing instead of common practice of water usage being covered by rent, which means individuals do not see any financial impact from water use.
 4. Identify incentives and regulatory tools to direct development to appropriate areas
Techniques such as transfers and purchase of development rights can help to discourage development in environmentally sensitive areas by allowing property owners to recognize financial value from their property while limiting development.
 5. Continue to advocate for relocation of the University's Main Accumulation Area
[The University's Main Accumulation Area for hazardous waste is currently located within a drinking water supply watershed. Relocation of this facility has been a high priority for many years. A 2013 study identified a preferred location on North Hillside Road. While an Environmental Impact Evaluation for the relocation is underway, previous studies have not resulted in implementation. The Town should continue to actively advocate for the facility's relocation.
 6. Strengthen regulations related to Stormwater Management Plans and Erosion and Sedimentation Control Plans
Comprehensive stormwater management and erosion and sedimentation plans are important elements of any land use project that significantly increases impervious surfaces such as subdivisions with new roads or steep driveways, multi-family housing and commercial development. These plans are critical to address potential water quality and quantity impacts from new development.
- F. ***Continue to protect Flood Hazard Areas from inappropriate development***

Actions

1. **Update flood hazard regulations as needed to reflect best practices**
Regulation of land use and land disturbance in flood hazard areas is a key component of mitigating future risk and damage. Mansfield should continue to update its current regulations to reflect best practices in floodplain management
2. **Consider expansion of flood hazard areas to reflect potential climate change impacts**
Current flood hazard zones are mapped based on existing FEMA National Flood Insurance

Program (NFIP) Maps, which are based on identification of a 100-year flood. Consideration should be given to identifying areas that would be impacted by a more significant storm such as a 200 or 500-year flood and adopting more stringent regulations in those areas.

3. Pursue grant funds for acquisition of properties within flood hazard areas

Acquisition of flood hazard areas can ensure adequate storage for flood waters and reduce emergency service impacts by removing people from hazard areas.

4. Participate in the NFIP Community Rating System (CRS)

Town participation in the CRS program can result in reduced flood insurance rates for property owners in flood hazard areas. With the adoption of significant changes to the national flood insurance program in 2012, these rates will be increasing dramatically in the coming years. Rate reductions are based on the type of measures the town puts in place to prevent flood damage, including policies, regulations, and education.

Goal- Mansfield’s forests and plant communities are diverse, intact and provide environmental, health, economic and quality of life benefits

Policies

- Support understanding and better management of forests and other plant resources

Strategy—*Promote and incentivize opportunities for Mansfield’s public officials, residents, and business owners to understand and value the economic, social, health, and environmental benefits of healthy forests and other plant communities.*

- ***Increase visibility of forests and forest management.*** Feature local forest products at community events, promoting forest experiences for the public, hosting educational events discussing forest stewardship practices and the economic, social, health, and environmental benefits of a healthy forest system.
- ***Encourage private forestland owners to participate in educational events concerning benefits and best management of forests.***
- ***Encourage landowners to conserve important plant communities, such as early succession vegetation.***

Strategy--*Mansfield manages its forests and other plant communities so that they are healthy and vigorous and provide the products and values the public and landowner desires.*

Action

- **Establish a Town forest working group** to assess Mansfield forests and identify strategies to sustain them.
- **Develop forest management plans for all Town forest lands.** Ensure that all appropriate Town-owned lands have forest stewardship plans. Forest stewardship plans that exist for town-owned property (Fifty-foot Cliff Preserve and Dunhamtown Forest) should be updated and implemented. As part of the plans, consider sustainable timber harvesting.
- Encourage private landowners to have environmentally, socially, and economically balanced stewardship goals. Private landowners can be educated and encouraged to have forest stewardship plans, riparian buffer management plans, and manage non-native invasive species.

- Sponsor forest stewardship demonstration sites in Town-owned and private forests to highlight good management practices
- Sponsor or co-sponsor educational events to connect owners of forests and other important plant communities with stewardship resources.
- Develop and fund a process for improved stewardship of Town parks, preserves and natural areas.

Strategy- Strengthen town zoning and subdivision regulations to encourage protection and stewardship of forests and other plant communities

Action

- Encourage vegetative/riparian buffers (see water section)
- Require management for contiguous forest, vegetative, and other habitats. Ensure proper edge management
- Strengthen existing land use regulations to emphasize the importance of identifying and protecting notable plant communities, including marshes, cedar swamps, meadows/grasslands and large contiguous forest tracts.
- Revise common driveway regulation so that it is not used as an inexpensive way for developers to develop back acreage. Require house lot frontage on existing town roads or on a proposed town road, not on a shared driveway.
- Continue to require a streamlined preliminary review so developers meet with committees before the public hearing process begins, require more information about plant communities on the property and surrounding land
- Work with DEEP to provide information about implementing community septic systems to promote cluster development.

Goal: Mansfield's wildlife and aquatic species are healthy, diverse and enjoy rich habitats that provide environmental, health, and quality of life benefits.

Policies

- Support understanding of and better protection/management of habitats for wildlife and aquatic species

Strategy-- Strengthen policies and regulations on non-native invasive species

Actions

- **Ensure that subdivision regulations effectively prohibit use of non-native invasive plants--** Currently, subdivision regulations prohibit use of non-native invasives plant determined by the Connecticut Invasive Plants Council in accordance with Connecticut General Statutes [22a-381a](#) through [22a-381d](#). Regulations should be expanded to include potentially invasive species. Where possible, native plants should be required.

- **Strengthen Mansfield’s non-native invasive species policy**--The non-native invasive species policy adopted in 2004 was adopted only on the staff level. This policy should be reviewed to determine if it can be strengthened.
- **Ensure that invasive species management is included in management plans for all Town-owned land**

Strategy-- ***Strengthen staff training and community awareness on non-native invasive species***

- ***Train public works staff and volunteers on invasive species identification and management.*** Public works staff play an important role in managing town owned lands and roadsides. A training program should be developed help PW employees identify non-native invasive species, reporting new infestations so that they can be key in early intervention of non native species. Other areas of training could include equipment cleaning techniques to prevent spreading non-native species, and control techniques. Volunteers should be trained to lead work parties to identify and control invasives.
- ***Educate the public about the environmental, health and economic impacts of invasive species.*** Collaborate with regional, state, and federal groups to develop campaigns, educational materials, and workshops. Several groups including the CT Invasive Plant Working Group (CIPWG), Ct DEEP, USDA Natural Resources Conservation Service, and the CT Agricultural Experiment Station, have developed educational materials regarding the environmental, health, and economic impacts of invasive species, management and control options, and native alternatives.

Strategy--Incentivize use of native species by local nurseries and landscape contractors-

- Work with local businesses and landscape contractors to encourage the use of native species.

Strategy: Mansfield plans, protects and manages its wildlife and critical habitats

Strategy : Mansfield’s residents are educated about the environmental, health, quality of life and economic benefits of healthy wild life habitats.

- ***Encourage the creation of backyard habitats and pocket parks to enhance wildlife habitat.*** Even a small yard can be landscaped to attract birds, butterflies, beneficial insects, and small animals. Trees, shrubs, and other plants provide shelter and food for wildlife. Partner with Audubon, USDA NRCS, and other organizations to provide information to residents.

Action

- ***Develop wildlife habitat corridor plans to determine critical habitat for management and protection.*** Planning for wildlife corridors can mitigate impacts of habitat fragmentation on wildlife and biodiversity. Roads,--small streets to major highways—development such as shopping centers or subdivisions, railroad lines, powerline corridors, canals, dams and non wildlife-friendly landscapes, can fragment wildlife habitat.

- **Manage early successional grassland and shrubland habitats on Town-owned land.** Early successional habitats include shrublands, some from former farmland reverting to forest, and grasslands (pastures and hay fields). Early successional habitats are critical for some wildlife species. Consider management techniques such as prescribed burning, mowing, timber harvesting, removing non-native species and planting native species.
- **Encourage participation in state and federal programs like EQIP, WHIP, that incentivize wildlife habitat improvements and other environmental quality improvements.** Private landowners are eligible for programs such as USDA Natural Resources Conservation Service's Environmental Quality Incentive Program (EQIP), and Wildlife Habitat Incentive Program (WHIP).
- ***Continue to make critical wildlife habitats a priority criteria for open space preservation***
- ***Consider developing a deer management program on Town-owned land and encourage CT DEEP to engage in better deer management strategies.***

Strategy- Strengthen town zoning and subdivision regulations to encourage protection and stewardship of wildlife and their habitats

Action

- Encourage vegetative buffers (see water section)
- Require management for contiguous forest, vegetative, and other wildlife habitats. Ensure proper edge management
- Strengthen existing land use regulations to emphasize the importance of identifying and protecting notable wildlife habitats and plant communities, including vernal pools, marshes, cedar swamps, meadows/grasslands and large contiguous forest tracts.
- Revise common driveway regulation so that it is not used as an inexpensive way for developers to develop back acreage. Require house lot frontage on existing town roads or on a proposed town road, not on a shared driveway.
- Continue to require a streamlined preliminary review so developers meet with committees before the public hearing process begins, require more information about surrounding land use and potential connections, and include specific expectations such as preserving natural buffers along road frontage.
- Work with DEEP to provide information about implementing community septic systems to promote cluster development.

I will compile our maps and assist in determining how to show these resources.

LISTING OF SIGNIFICANT CONSERVATION AND WILDLIFE RESOURCES

The following listing is intended to identify locations and/or streambelts/greenways which have significance with respect to conservation and wildlife resources in Mansfield. The listing is not intended to suggest priorities.

NATURAL DIVERSITY RESOURCES

- Locations depicted in the Connecticut Department of Environmental Protection Agency's Natural Diversity Data Base mapping (see Map 11 of this Plan)

WATER RESOURCES (Surface and Groundwater)

- The Willimantic River Valley Greenway from the Willington town line to the Windham town line, including Eagleville Lake, an important stratified drift aquifer associated with UConn well fields north of Route 44 and west of Route 32 and tributary streams;
- Weaver Brook streambelt, which bisects the University of Connecticut's Depot Campus and enters the north end of Eagleville Lake;
- Cedar Swamp Brook streambelt, which flows from Cedar Swamp (a large, important swamp extending north into Willington and south across Rt. 195 into Mansfield) joining Nelson Brook and ultimately entering the north end of Eagleville Lake. Cedar Swamp itself, scenic falls, old dams, ledges, Pink Ravine Pond and Pink Ravine are all features of this streambelt system.
- Nelson Brook streambelt, which enters Mansfield from Willington and joins Cedar Swamp Brook at Shelter Falls Park. Two of its tributaries drain unusual wetlands. The first, a unique perched oligotrophic pitch pine-blueberry bog, lies just north of Rt. 195 and west of Tony's Garage. The second is roughly 100 acres of wetlands and glacial ridges. This parcel is nearly surrounded by residential development on Cedar Swamp Rd., Rt. 195, Baxter Rd. and Rt. 44. Another significant wetland, made up mainly of a dwarfed maple swamp, accompanies Nelson Brook from northwest of its crossing of Rt. 44 to its crossing with Birch Rd.
- Eagleville Brook streambelt, including a tributary stream north of S. Eagleville Road;
- Dunham Brook streambelt, including Dunham Pond and associated upland wetlands and tributary streams;
- Cider Mill Brook streambelt, including Coutu Pond and tributary streams;
- The Fenton River Valley streambelt, including associated stratified drift aquifer areas, adjacent meadows, ledges, hillsides and tributary streams;
- Fishers Brook streambelt, including "Codfish Falls" and tributary streams;
- Gurleyville (Valentine) Brook streambelt, including Valentine Meadow, the Horsebarn Hill drumlin, adjacent University of Connecticut agricultural land and tributary streams;
- Tift Pond and the Albert E. Moss Sanctuary south of Route 275, west of Rt. 195 and north of Birchwood Heights Road;
- Hanks (Hitchcock) Pond and associated streambelt areas;
- Bradley Brook streambelt, including Hansen's Pond and tributary streams to both Bradley Brook and Hansen's Pond;
- Schoolhouse Brook streambelt, including Bicentennial Pond, Schoolhouse Brook Park, Chapins Pond and tributary streams;
- The Mount Hope River Valley streambelt, including associated stratified drift aquifer areas, hillsides, identified potholes and tributary streams;
- Knowlton Pond, Leander Pond and McLaughlin Pond and the streambelt areas between these ponds;
- The Mansfield Hollow Reservoir (Naubesatuck Lake) and associated flood plain and stratified drift aquifer areas;

- Echo Lake, Eaton Bog and associated stratified drift aquifer and streambelt areas;
- The Natchaug River Valley streambelt, including the Willimantic Reservoir;
- Kidder-Sawmill Brook streambelts, including a significant white cedar swamp between Maple Road and Mansfield City Road that is on State DEP priority lists; Wolf Rock, east of Crane Hill Road, a significant forest area south of Browns Road, east of Crane Hill Road, north of Puddin Lane and west of Route 195, and tributary streams;
- Conantville Brook streambelt, including associated stratified drift aquifer areas and tributary streams;

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AGRICULTURAL AND FORESTRY RESOURCES

- Agricultural land in southwestern Mansfield, hillside vistas extending from Browns Road through Pleasant Valley Road and along Mansfield City and Crane Hill Roads;
- Agricultural land located along Rt. 32 north and south of Route 44. Important natural features and scenic beauty make this area significant.
- Agricultural land east and west of Route 195 behind Mansfield Supply and in the Horsebarn Hill area;
- Prime agricultural soils and agricultural soils of State-wide significance within active farming areas;
- Interior forest tracts as identified on Map #21 of this Plan

GEOGRAPHY AND EARTH RESOURCES

- Coney Rock and adjacent steeply-sloped and hillside areas north of Mulberry Road and east of Chaffeeville Road;
- Fifty-foot Cliff and adjacent steeply-sloped areas west of Chaffeeville Road

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