Excerpts of Manchester Town Plan

Exhibit MHG-TH-7

MANCHESTERVERMONT
So Close So Vermont

Manchester Town Plan, 2017

Adopted May 9, 2017

Town of Manchester, Vermont, Chartered in 1761

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Manchester Historical Society
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Section 2.1: Energy

Energy Mission: Encourage and support the conservation of energy and the development of renewable energy resources in Manchester.

Energy - its availability, cost and environmental impacts - is of critical importance to all aspects of individual and community life. Some key energy resources, such as oil and gas, are subject to fluctuating supply and cost and contribute to increased carbon dioxide in the atmosphere, and pollution of air, water and land resources. Conservation, whether through increased efficiency or decreased demand, will be the most important component of minimizing the costs of energy usage. Every dollar not spent on energy is available for local investment or saving, and to meet other basic needs. Optimizing energy use does not just lower operating costs, it also lessens adverse environmental impacts and thereby the costs associated with environmental damage and impaired public health.

Action: Amend the land use and development ordinance to more effectively encourage compact, denser development and use of the core while protecting the rural character of outlying areas.

Effective land use planning promotes energy efficient design. Higher density development in the core with mixed uses including housing, lessens the need for car travel and allows for more efficient provision of services compared to scattered development. An efficient network of sidewalks and trails, along with effective parking strategies, make it easier and more comfortable to walk or bike instead of driving. The town is actively pursuing zoning changes that aim to encourage denser use in the core while protecting the rural character of the surrounding countryside. This effort is in line with minimizing energy consumption.

The siting, design, and construction of buildings effects the amount of energy needed for heating and cooling, as well as the amount of electricity needed for lighting. Proper subdivision design, building orientation, construction, and landscaping provide opportunities for energy conservation measures such as less vehicular travel, passive solar heating and cooling, and natural lighting. These strategies are discussed further in part 2 of this plan. Additional energy savings can be realized by retrofitting existing buildings with insulation, more efficient doors and windows, weather stripping, compact fluorescent or LED (light emitting diode) lights, more efficient appliances, and more efficient use of those appliances.

The town itself will set a positive example by considering energy issues in all decisions concerning capital expenditures on municipal infrastructure, as well as operating and maintenance costs for buildings, facilities, and vehicles. An *ad hoc* Manchester energy committee active in 2008 and 2009 spearheaded energy conservation projects, including replacement of streetlights and energy audits of town buildings and facilities. Accomplishment of recommended actions from the energy audits led to energy conservation measures at the town hall and public safety facility, as well as a new more energy efficient pool house at the Dana Thompson Memorial Park. The town will continue to pursue energy conservation, use of cleaner fuels, and other strategies to optimize energy efficiency in all municipal buildings, vehicles, and programs.

The town strongly supports broadened awareness of and application of best practices in all aspects of energy production, consumption, and conservation. These include, but are not limited

to meeting or exceeding State of Vermont energy efficiency standards for residential and commercial construction, and application of LEED (Leadership in Energy & Environmental Design) or similar standards in all aspects of site design and construction. Municipal practices referenced throughout this plan will also reinforce this policy, including continuing to build sidewalks, paths, and other amenities to encourage walking and cycling, and strengthening opportunities for downtown housing. The town encourages other best practices to reduce energy use and pollution, and otherwise lessen adverse impacts (*e.g.*, avoiding excessive lighting or unnecessary idling of motor vehicles, reuse and recycling of materials). Continued partnership with Efficiency Vermont on educational and efficiency programs may yield further benefit in reducing demand, thus also extending the life of existing supplies and infrastructure.

Dark Skies

Manchester recognizes the importance of dark skies in reducing energy use, protecting public health and the life cycles of our resident flora and fauna, and providing for recreational astronomy and wilderness opportunities.

Controlling artificial light in Manchester protects the natural wax and wane of the light cycle and permits the beauty of the night sky to shine, thus enabling both residents and visitors of our town to marvel at the wonders of the universe. Light pollution, defined as any adverse effect of artificial light, is a growing problem throughout the world, including in Manchester. Sky glow, glare, light trespass, light clutter, decreased visibility at night, and energy waste, are some of the negative consequences of excessive and poorly designed lighting, particularly outdoor lighting. Light pollution disrupts the earth's natural rhythm of day and night. Humans, and most other organisms on earth, evolved within the context of the light-dark cycle of day and night. Research is making it clear that artificial light, particularly blue light at night, contributes to many human health problems including depression and obesity. Manchester's dark skies constitute a precious resource. To protect Manchester's dark skies, enhance public safety and limit energy waste, the *Manchester Land Use & Development Ordinance* limits the brightness of exterior lighting and requires it to be shielded. The planning commission will propose strengthened ordinance provisions with regard to outdoor commercial lighting to require lights to be extinguished by a certain time past closing with the exception of security lights triggered only by motion sensors.

Renewable Energy Resources

Action: The town recognizes the benefits of renewable energy use and will establish a renewable energy resource plan to guide the development of renewable energy resources in Manchester.

The state has established a goal of attaining 90% of its energy use from renewable energy resources by 2050. In order to realize that goal, Act 174, passed by the legislature in 2016, aims to improve regional and local renewable energy resource planning with the implementation of a program to certify regional and municipal renewable energy resource plans. A renewable energy resource plan should include town scale geographic analysis showing suitability for access to renewable resources. Constraints such as protected wetlands, river corridors or rare natural communities should be extracted from areas of suitability. Other constraints may not preclude renewable energy resource development, but warrant consideration, including the presence of prime agricultural soils and identified cultural and scenic resources. Manchester must identify critical resources to be protected from development but must allow reasonable area for renewable energy development. Accordingly, by May 2018, the town will develop a renewable

energy resource plan under the guidance of the Bennington County Regional Commission (BCRC).

In the meantime, planning at the regional level by the BCRC has identified current solar generation of 1,017.3 kilowatts (kW) in Manchester and new generation by 2050 of 10.4 megawatts (MW) as appropriate for the town. The town has expressed support for a proposed 1.3075 MW project on the 4-acre roof of the Natural Form mattress factory that would be the largest rooftop installation in Vermont. Furthermore, the town is pursuing installation of a 150 kW solar array at the municipal wellheads. The electricity generated would be purchased by the town at a 10% discount and would power the wellhead pumps. Various other solar projects have been realized in Manchester in recent years, including a 142.5 kW array at the Riley Rink, the 137.8 kW rooftop installation at the downtown car dealership, and a 55.9 kW solar tracking installation at Henry's Bistro, and a 150 kW rooftop array at the Vermont Country Store. These four projects account for a significant portion of the 1,017.3 kW currently being generated in town.[1] BCRC has indicated that wind and hydroelectric power generation would be limited in Manchester, although wood biomass production could be regionally significant.

Renewable energy resources use offers potential advantages over continued use of fossil fuel based resources. Potential benefits include lower or no global warming or pollutive emissions, improved environmental quality and public health, stable energy prices and a resilient energy system, jobs and a strengthened local economy, as well as an inexhaustible supply. Consequently, solar, wind, hydroelectric, geothermal, biomass and wood gasification energy production and use should become more prominent in the town's energy mix. The town will support efforts to research and develop these and other alternative, ecologically sound energy sources. The town itself will consider options for enhancing its own renewable energy production or supplies. Key to supporting the development of renewable energy resources in Manchester will be to adopt a renewable energy plan according to newly established rules developed by the Vermont Department of Public Service. Certification by the state will require that the plan receive substantial deference in Vermont Public Service Board proceedings, ensuring that Manchester's socioeconomic wellbeing is protected from incompatible energy development.

Section 2.2: Natural Resources

Natural Resources Mission: Protect Manchester's natural resources, particularly its scenic ridgelines and the Batten Kill.

Manchester's long-term success as a livable community depends upon how well we maintain and enhance our unique natural resource assets. Natural resources have inherent value above and beyond their perceived value from a human perspective. Natural resources are the foundation for life and the natural processes that form essential interconnections between all living species and earth systems. What happens to one resource invariably affects others, including human systems. Manchester's economic success over the past 200 years (and undoubtedly over the next 200 years) is inextricably linked with its natural resources and natural beauty. Thus, even from a purely human perspective, the town must take the long view, and protect and conserve its natural resources.

Understanding the natural environment is a key consideration when planning for appropriate land use. Physical conditions (including but not limited to soils, slopes, elevation, critical

[1] Community Energy Dashboard Energy Atlas, January 27, 2017. http://www.vtenergydashboard.org/energy-atlas

habitats, wetlands, drainage channels, and flood hazard areas) may limit the type of development that is appropriate for a particular area. The need to preserve forests, wetlands, riparian areas and other critical natural resources must also influence land use planning. Indeed, general land use plans as well as specific site development plans must consider natural resource opportunities and constraints first, and then design appropriate site development plans with these in mind. Land use policies are described in Part 2 of this plan.

A variety of unique natural features have been identified as important to the ecological and socioeconomic wellbeing of Manchester. These are identified and described in Appendix A. These unique natural features and other critical parcels of land, including but not limited to those described in Appendix A, should be conserved or preserved as they are or in a natural condition. The town may wish to further refine and prioritize this list so that conservation efforts are effective and efficient in achieving municipal goals. Conservation or preservation can be achieved by fee-simple acquisition, donation or acquisition of development rights or conservation easements, involvement of land trusts or other charitable organizations, and other cooperative strategies or partnerships which accomplish the desired goals. Indeed, several of the natural features listed in the appendix are already protected by a variety of means by various partnerships, agencies or organizations.

Ridgeline Resources

The Town of Manchester recognizes the essential economic, ecologic and spiritual value of the Green Mountain and Taconic Ridgelines.

Manchester is situated in the Batten Kill Valley with the Green Mountains on the east and the Taconic Range on the west. Equinox Mountain on the west is singularly iconic of the Manchester experience and has been the subject of relatively recent passionate protection from wind energy development of its southern flank, Little Equinox Mountain. Hundreds of acres of the eastern slopes of Mt. Equinox have been protected through the efforts of the Equinox Preservation Trust. However, the ridgeline is largely owned by the Carthusian Foundation of America, which operates a monastery on the western flank of the mountain. As such it is not permanently protected from development and in 2005 Equinox Wind Partners, LLC, which held a 25 year lease from the Carthusians, proposed the reinstatement of wind turbines on Little Equinox Mountain, falling to the south and west of the main peak. The Town of Manchester and Manchester Village engaged the Orton Family Foundation to provide an impact analysis of the proposal for the public. A vote at town meeting in 2006 authorized significant funds - and Manchester Village was similarly committed - to fighting the project, and in the end it was abandoned by the developer.

Ridges and mountaintops provide much of Manchester's natural beauty; protection is an important local and regional goal. Manchester's surficial geology is among the most diverse in the state, and the mountain tops and ridges of the Taconic and Green Mountain Ranges form a striking backdrop for the town. Many glacially formed hills and ridges are found at lower elevations in Manchester. This topographic diversity provides an important natural, visual contrast to the built environment. These hills, ridges, and mountains contribute to the natural beauty of Manchester and warrant protection. With regard to lower slopes and hillsides, the intent is not to prohibit all development; rather, that development and structures be sited sensitively and appropriately, in ways that fit into the landscape.

Land areas at higher elevations are fragile and susceptible to damage, since environmental conditions are more severe (more precipitation, higher wind speeds, lower air and soil

temperatures, and shallower and more poorly-drained soils). Since fewer plant and animal species can survive such conditions, there is less ecological diversity in these higher-altitude communities. Therefore, these areas are generally more vulnerable and need greater protection from development.

Action: A component of developing a renewable energy resource plan will be to conduct viewshed analyses to identify and quantify the relative importance of ridgeline resources in Manchester.

Surface Water Resources

The Town of Manchester recognizes the importance of healthy riparian zones and surface waters in protecting both the natural and socioeconomic wellbeing of our community.

When in good condition, aquatic ecosystems such as streams, rivers, ponds, lakes, and wetlands can provide numerous benefits to human communities, including recreational opportunities like fishing and swimming, flood control, and a predictable and sustained water supply for irrigation and other uses. Collectively, these ecosystem services provide considerable economic benefit. For example, a healthy river filled with clean cold water and trout means revenue for hotels, restaurants, fishing guides, and regional retailers. Similarly, having healthy aquatic systems also means spending less money building flood control infrastructure or on after-flood recovery.

One of the most important issues in protecting and maintaining aquatic systems is good stewardship of riparian zones. Riparian zones are bands of vegetation serving as interface between uplands and aquatic systems. Riparian zones should be thought of as both unique ecosystems in their own right and as integral parts of the aquatic system, as the health of the riparian zone is a direct reflection and control on the health of the aquatic system. Riparian zones provide many important services to aquatic systems, including providing shade, which regulates water temperature (a critical concern for healthy fish populations), trapping nutrients and sediments that would otherwise enter and pollute the aquatic system, stabilizing riverbanks and preventing bank erosion, and providing "riverwood" into the aquatic system which is an important habitat element. Riparian zones also provide important habitat for many species of birds, mammals, amphibians and reptiles. When viewed at a landscape scale, riparian zones often function as movement corridors for both resident and migratory species, as riparian zones are, or could be, near continuous bands of high quality habitat latticed across an otherwise developed landscape.

As a general guide, a healthy riparian zone can be thought of as one where native species predominate and where multiple vegetation strata are present, including ground cover such as native grasses, ferns or duff layer, a community of intermediate height shrubs and both young and old trees. Old (*i.e.*, large) trees are particularly important in riparian zones, as they provide the greatest benefits to the system in terms of bank stabilization, shade, nutrient inputs and filtering, and current and future habitat. The protection of these large trees in riparian areas must be a notable priority in land use decisions.

The most pervasive threat to riparian zones, and one well under human control, is the removal of existing trees and shrubs, whether it is for timber harvest, expansion of agricultural fields, or simply to provide a view. Manchester seeks to limit, or fully eliminate, encroachment of these kinds of activities into riparian zones. Other common threats to riparian zones include exotic species, which can smother native plants and typically offer little or no habitat or food value to

native animals, and alterations to the hydrology of the aquatic system (*i.e.*, water diversions or other consumptive uses) that can promote drying out of riparian zones and their eventual progression to upland like conditions.

Perhaps the most widely applied approach for protecting riparian zones is the idea of buffers, meaning a width of land around the perimeter of the aquatic system and encompassing all or some part of the riparian zone within which certain land use activities are regulated. While there is no hard and fast rule on how wide a buffer strip should be to protect a water body, a general rule is that for smaller streams *(e.g.*, headwater streams), the stream edge buffer should be 10 to 20 feet on each side of the stream. For larger streams, rivers and still waters, buffer widths of anything from 20 to 100 feet have been used with the basic approach that the more pristine or otherwise ecologically important an area is, the wider and more restrictive of uses the buffer should be.

Wetlands provide a transition between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water. A wetland has one or more of the following three attributes: (1) at least periodically, the area supports predominantly hydrophytic (water loving) vegetation; (2) the substrate is predominantly undrained hydric (wet) soil; or (3) the substrate is nonsoil, and is saturated with water or covered by shallow water at some time during the growing season of each year. Benefits provided by freshwater wetlands include: flood and stormwater control, critical fish and wildlife habitat, protection of subsurface water resources, provision of recreational opportunities, pollution abatement, erosion control, educational and scientific research opportunities, open space and aesthetic appreciation, and provision of nutrients for freshwater food cycles. As such, wetlands should be protected from development. Before changes are made to streams, rivers, wetlands, or riparian land, consultation with appropriate state agencies is required. Streams and rivers are not just passageways for water; they are a fundamental part of our ecosystem, and a watershed approach to land use management is important in protecting these resources. In addition to riparian buffers, setbacks from lake and pond surface waters should also be required.

Batten Kill: The Town of Manchester recognizes the essential economic, ecologic and cultural values of the Batten Kill and its major tributaries.

The Batten Kill and its tributaries are an important natural, recreational, and economic resource which should have the greatest protection possible. Designation of the Batten Kill by the State of Vermont as only one of four Outstanding Resource Waters within the state reinforces these local values. Any expenditure of funds by the town for conservation purposes should give the highest priority to the acquisition of land or easements for property identified for protection along the Batten Kill. Special measures will be taken to conserve and enhance the natural, scenic, recreational, historic and cultural elements of the river and landscape.

Forest Resources

The Town of Manchester recognizes the importance of healthy forest ecosystems in protecting both the natural and socioeconomic wellbeing of our community.

Forest and timber lands cover much of Manchester. These forests stabilize soils and slopes, prevent flooding, provide valuable timber, wildlife habitat, and recreational resources, filter air pollutants, and have important recreational, economic, and aesthetic value. Indeed, our forested ridgelines are key to our economic wellbeing. Consequently, land use and development of forested lands in Manchester should maintain natural vegetative cover to the greatest extent

possible. Steep slopes and higher altitudes are more sensitive, and require higher levels of protection and review. Logging, timber, and forestry activities must, at a minimum, follow the State's recommended Accepted Management Practices for maintaining water quality. In addition, loggers should employ strategies that ensure a long-term sustainable yield of timber, maintain and enhance the ecological integrity of forest ecosystems, and minimize or prevent adverse impacts upon the land.

The *Manchester Land Use & Development Ordinance* establishes the Forest & Recreation zoning district, encompassing more than 50% of the land area of the town and including all lands above 1,600 feet in elevation on the Taconic ridgeline and all lands above 1,200 feet on the Green Mountain ridgeline. Uses in this district are limited to those requiring a forested landscape. Development of buildings serving these uses is allowed only at very low density. Other wooded lands are extensive in other rural parts of town, but the ordinance does not explicitly require maintaining them as forest except in the case of some required surface water setbacks. In fact, many of these lands fall in the Farming & Rural Residential zoning district, which has allowed a 2 acre minimum lot size since 1983. The town is currently pursuing zoning district changes that would increase the minimum lot size for these rural areas. This should help protect existing wooded lands, but targeted permanent conservation lands may be important to protect such lands that provide irreplaceable functions if lost to pasture or development.

Action: The Conservation Commission will work to identify wooded lands providing irreplaceable ecological functions and seek funding for conservation easements or other appropriate protection tools.

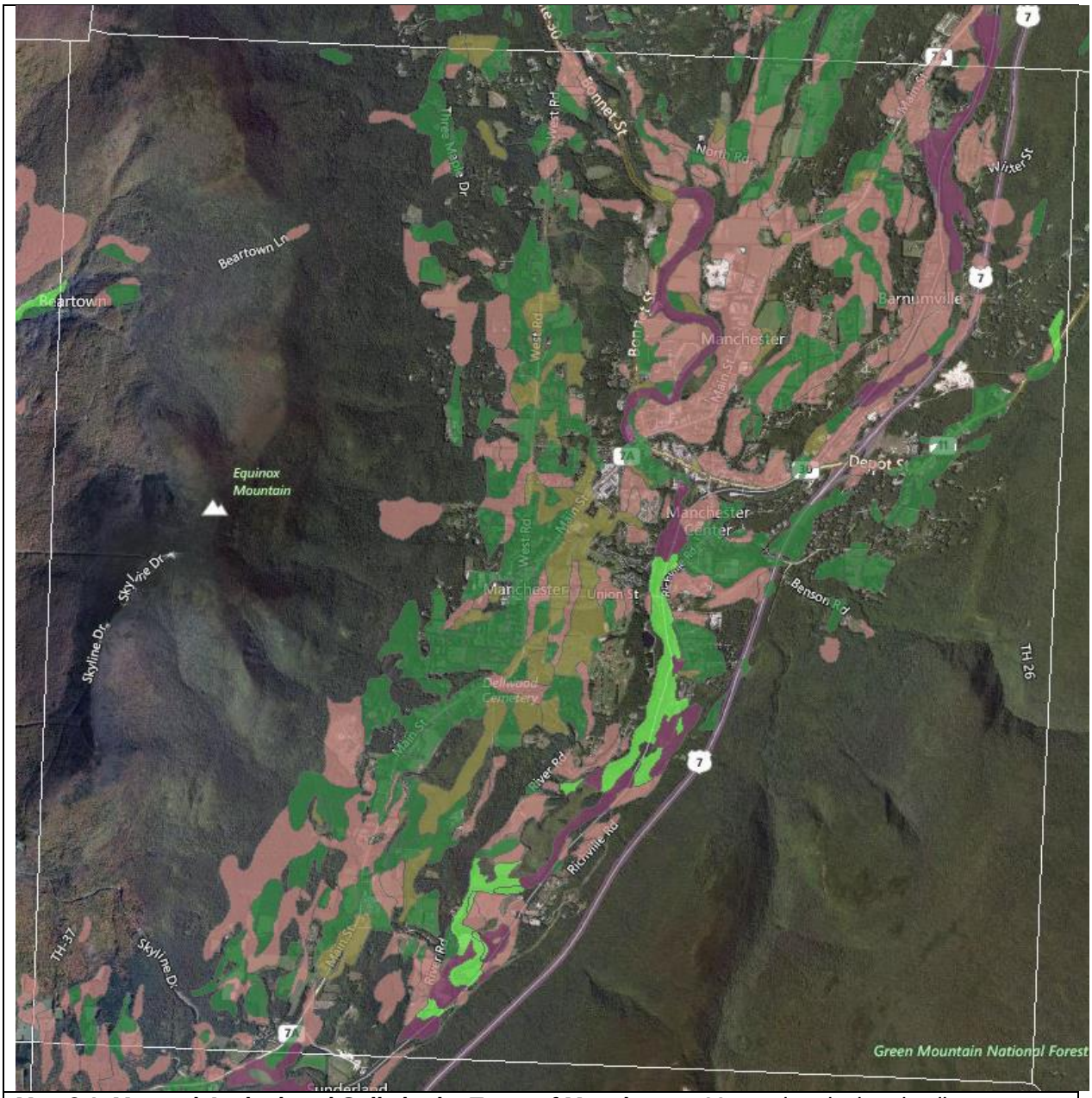
Agricultural Resources

The Town of Manchester recognizes the importance of successful agricultural enterprise to the socioeconomic wellbeing of our community.

Agriculture, while not a dominant land use in Manchester today, remains essential to Manchester's working landscape cherished by residents and visitors alike. It is important to conserve agricultural lands for this reason and to provide for potential future needs. Therefore, the town will pursue all available tools to protect agriculture as a viable use of land, and to ensure that high quality soils for agricultural use will be available in the future. Indeed, many believe that more localized food production will be a key component of future economic vitality in our region. Accordingly, support for local agriculture is in line with economic development goals identified by NEDS to establish a culinary trail in Manchester and to support value added food production in town. The town is currently pursuing changes to the zoning ordinance that would allow more rural enterprise activities and light food manufacturing in particular. Other zoning tools include requirements for clustering in residential, commercial, or industrial developments, and allowing the transfer of development rights from farmlands to other lands in the core. These will be considered by the Planning Commission in its development of the proposed new ordinance.

Despite Manchester's relative lack of working farms, agricultural soils are extensive in town and correspond roughly with the Batten Kill Valley and its tributaries. Some of these soils are essentially protected from development because they fall in flood hazard areas. Others may be susceptible to development pressures. Subdivision review should carefully evaluate the presence agricultural soils of primary and statewide significance and measures should be required to protect them. This may involve clustering of lots such that agricultural soils remain on a common conservation parcel. Where subdivision is not proposed, review of commercial projects

should also note the presence of agricultural soils and approvals should include conditions that offer their protection.



Map 2.1. Mapped Agricultural Soils in the Town of Manchester. Mapped agricultural soils are extensive in Manchester, including soils of both primary agricultural importance (shades of green) and statewide agricultural importance (pink and purple).

Source: Vermont Natural Resources Atlas (http://anrmaps.vermont.gov/websites/anra5/)

Other than regulatory approaches to ensuring the economic vitality of local agriculture, the town will encourage opportunities for farmers markets or community supported agriculture programs, as well as farm to table programing in local schools and elsewhere. The town supports the seasonal Manchester Farmers Market by providing its Adams Park location. Going forward, the town will work with the Manchester Farmers Market to ensure its success and ongoing viability. Participation in the development of a Manchester Culinary Trail as identified in the

economic development section of the plan can function as another means of supporting local agriculture insofar as participating businesses purchase foods from local farms.

In addition to these efforts, a few dozen Manchester landowners take part in the state Current Use Program, or Use Value Appraisal of Agricultural, Forest, Conservation and Farm Buildings Property Program. This program allows for the valuation and taxation of farm and forest land based on its agricultural or forest use instead of its significantly higher market value. A total of about 1,000 acres of agricultural lands within the Town of Manchester are enrolled in the program (with about 4,800 acres of forest lands enrolled). The program offers positive means toward protecting agricultural resources that minimize hardship for agricultural landowners and the town will continue to help eligible landowners take advantage of this state program.

Historically agricultural operations have been the cause of significant environmental damage, particularly with regard to water quality and riparian health. This continues to be the case most significantly in Vermont with the water quality of Lake Champlain being significantly negatively impacted by agricultural runoff. Although Manchester does not lie in the Lake Champlain Basin, agricultural practices in town have the potential to negatively impact the water quality of the Batten Kill. Conversion of riparian zone natural cover to pasture or cropland, stream channeling, and implementation of erosion control measures are all practices that threaten stream water quality. Without direct regulatory jurisdiction, municipalities in Vermont must rely on the Vermont Agency of Agriculture, Food and Markets to enforce its Accepted Agricultural Practices and Best Management Practices for agricultural operations to ensure the protection of water quality.

Geologic Resources

The Town of Manchester recognizes its geologic resources as important components of our community wellbeing.

Sand and gravel deposits are abundant throughout the Batten Kill Valley in Manchester, and demand remains strong for these resources (See Map 2.2). As specified in the *Manchester Land Use & Development Ordinance*, mining or extraction must be conducted in ways that minimize adverse impacts upon surrounding lands, prevent depreciation in the value of surrounding lands, and ensure that residential areas are not disturbed by noise, truck traffic, disruption of water supplies, or other impacts related to extractive operations. Extra care must be taken regarding all aspects of extractive activities in highly visible areas, during project review and then during permitted operations.

Following sand and gravel extraction disturbed land must be rehabilitated in a timely manner so that it is usable for other purposes. Land rehabilitation should take place in a phased approach as material is removed, and should not wait until the subject parcel or resource is played out. This will ensure that large areas of land are not laid bare for long periods of time before rehabilitation activity begins and concludes.

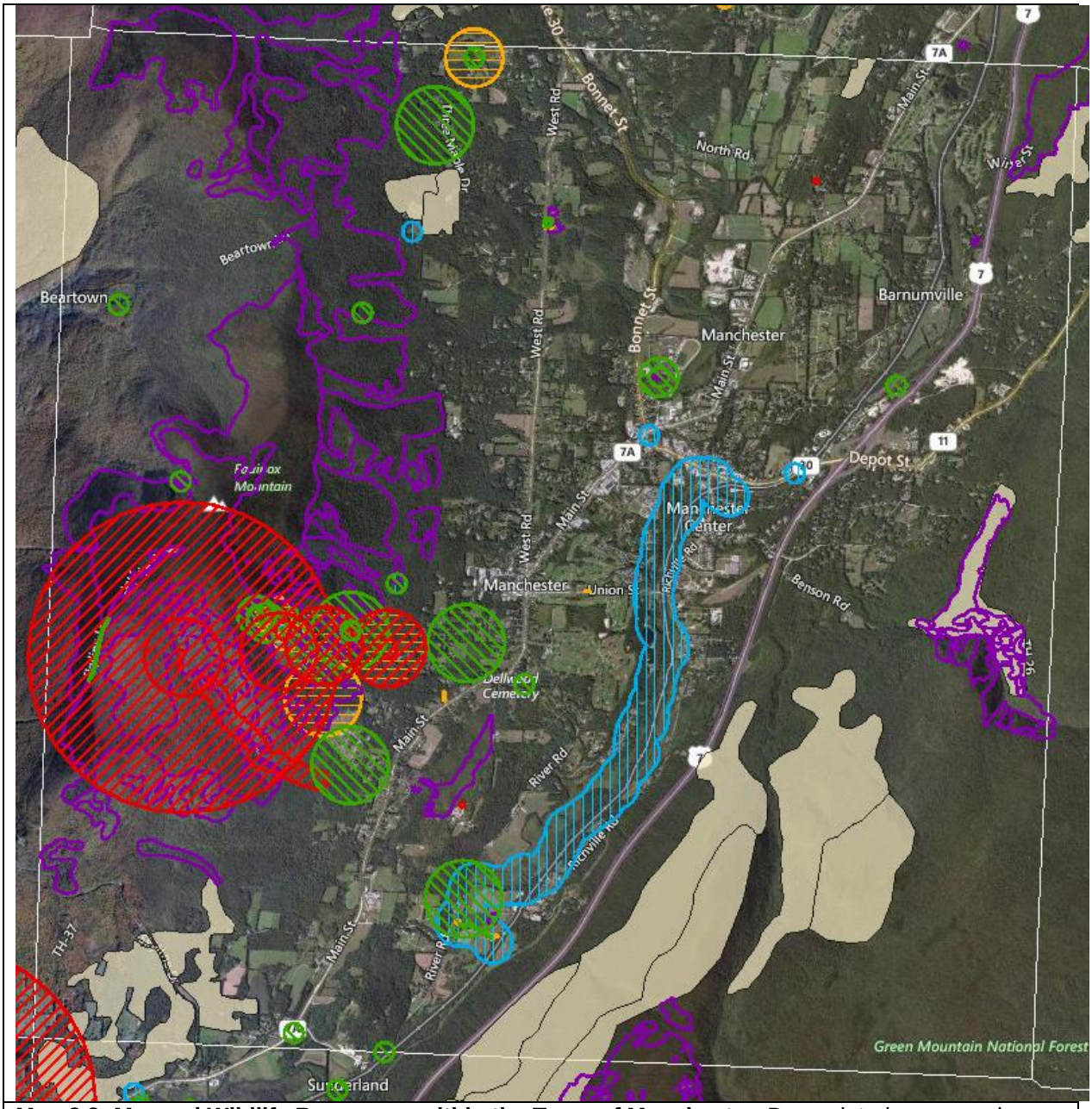
Land development continues to depend on a clean and adequate groundwater supply. To ensure maximum yield and quality, areas with high groundwater storage or recharge capability must be protected. Hydrologic features, aquifer recharge areas, and watersheds which replenish surface and ground water supplies providing clean water for public consumption must be protected from incompatible development. The town's wellhead protection area (see Map 3.2 in Section 3.2) should be expanded as needed. From an ecological perspective, the entire town is underlain by an aquifer. Indeed, much of the valley consists of gravel soils, through which water and other

Map 2.2: Sand and Gravel Deposits. Sand and gravel resources as mapped by the Vermont Agency of Natural Resources. Note: Some gravel pits exist outside of these mapped areas within the town.
Source: Vermont Natural Resources Atlas (http://anrmaps.vermont.gov/websites/anra5/)

materials can percolate easily. This increases the potential for contamination of subsurface aquifers. In order to protect the municipal wells, an Aquifer Protection Area has been established in the land use and development ordinance which restricts land uses to those which present low probabilities for contamination. Other strategies will be considered for further protection of water supplies throughout town. More details about the municipal aquafer and protection area is provided in section 3.2 of this plan.

Wildlife Resources

The Town of Manchester recognizes its natural flora and fauna as important components of our community wellbeing.



Map 2.3: Mapped Wildlife Resources within the Town of Manchester. Deer wintering areas shown in tan, crossed hatched circles indicate the presence of rare or threatened species, significant natural communities outlined in purple.

Source: Vermont Natural Resources Atlas (http://anrmaps.vermont.gov/websites/anra5/)

The Vermont Agency of Natural Resources online natural resources atlas identifies a number of rare and threatened species occurrences and important natural communities in Manchester (See Map 2.3). The species sightings include grasses, sedges, flowers, trees, butterflies, salamanders, and bats. Bat populations in general have suffered severe decline in recent years due to White-

nose Syndrome, and Manchester should be involved in state bat monitoring and protection programs. In addition to threatened species, bear, deer and turkey are quite commonly observed in town, along with many other smaller mammals and birds. Moose have also been recently sighted. Each individual wildlife species offers certain and important functions for a healthy ecosystem in Manchester. As such the town seeks to ensure that adequate habitat is available for the continued survival of wildlife populations. Accordingly, the Manchester Conservation Commission has identified habitat connectivity between the eastern and western forested mountain ranges as important to the protection of the town's wildlife resources.

Action: To ensure habitat connectivity for wildlife, the conservation commission will partner with public agencies and private organizations to identify corridors. The commission will work with partners to protect these corridors and install safe pathways across roads or other developed features where needed.

Deer wintering areas, also known as deer yards, provide shelter and browse for deer during extreme winter conditions and are crucial to the survival of deer herds in the region. Deer yards are delineated in the online Natural Resources Atlas by the Vermont Agency of Natural Resources. The atlas shows extensive deer yards within the Green Mountains in the southeast section of town, but limited wintering areas in the Taconic Mountains on the west side of town (See Map 2.3). Fortunately, most of the mapped deer yards fall within the Forest & Recreation (FR) zoning district, which offers protection of these areas to remain wooded. In fact, several acres of mapped deer yard were recently lost at the corner of Beartown Road and Three Maple Drive within the Farming & Rural Residential (FRR) zoning district to make way for a 30 acre horse farm. Several adjacent acres of this mapped deer yard were lost years before to clearing for residential meadows.

Action: The conservation commission will seek to identify deer wintering areas not indicated on the ANR atlas. If such areas are found, the conservation commission, in partnership with landowners and private conservation organizations, will work to encourage their protection by easement or other deeded restriction.

The Vermont Agency of Natural Resources has identified invasive species as the second most significant threat to biodiversity in Vermont and around the world. Invasive species in Manchester include both terrestrial and aquatic threats.

Action: The conservation commission will partner with The Equinox Preservation Trust and other organizations, as well as the State of Vermont, to raise awareness and work to eradicate invasive species from Manchester.

Section 2.3: Flood Resilience

Flood Resilience Mission: Encourage and enact practices that minimize and protect against the loss of life, or damage to health, natural resources and property in Manchester during flood events.

In 2011, spring flooding and Tropical Storm Irene caused extensive and unprecedented damage in Vermont. Consequently, all town plans adopted after July 1, 2014, are now required to address flood resilience. Resilience generally refers to a community's capability to anticipate, prepare for, respond to, and recover from natural disasters with minimum damage to social wellbeing, the economy and the environment. Climate change will result in more frequent and