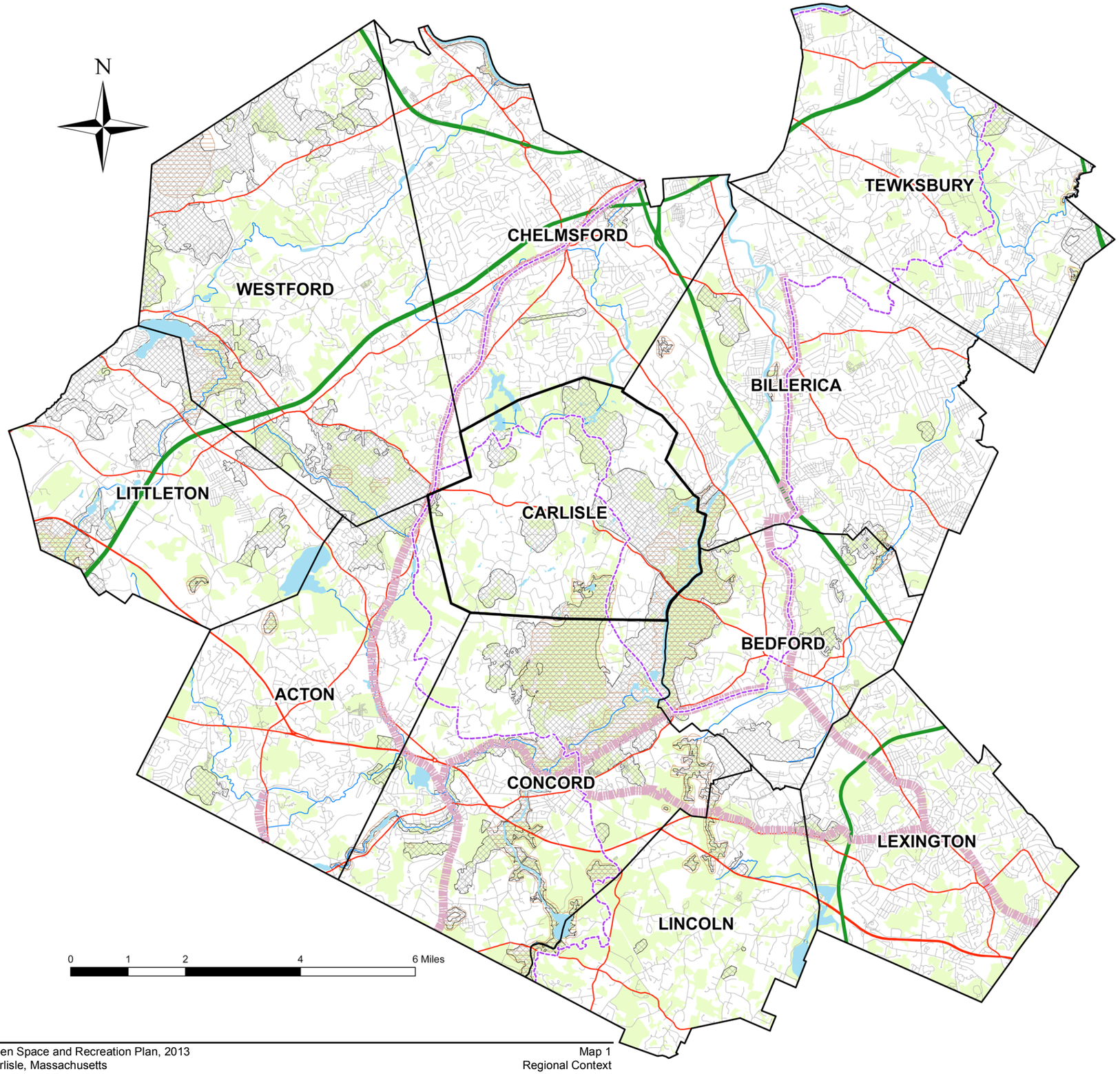
Map 1
Regional Context

Carlisle is bordered by the six towns of Acton, Bedford, Billerica, Chelmsford, Concord, and Westford. Carlisle shares various natural resources with these towns, including the Concord River, Great Meadows National Wildlife Refuge, Greater Estabrook Woods, the Cranberry Bog Conservation Land, and other open space parcels, roads and trails, streams and watersheds.

Carlisle is in the Sudbury, Assabet, and Concord Rivers watershed.



Legend

- Bay Circuit Trail (proposed circuit)
- Bicycle Trails
- Highways
- Major Roads
- Streets
- Rivers and Streams
- Lakes and Ponds
- BioMap2 Core Habitat
- BioMap2 Critical Natural Landscape
- Open Space

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Map 2
Environmental Justice

Because Carlisle does not have Environmental Justice (EJ) populations, this map is not required and therefore is not included.

The Commonwealth's 2008 "Open Space and Recreation Planner's Workbook" includes this description of its EJ Policy.

"Since 2002, the Executive Office of Energy and Environmental Affairs (EOEEA) has been implementing an Environmental Justice Policy to help ensure that all Massachusetts residents experience equal protection and meaningful involvement with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies and the equitable distribution of environmental benefits. This policy was instituted recognizing that communities across the Commonwealth, particularly those densely populated urban neighborhoods in and around the state's older industrial areas, are facing many environmental challenges associated with Massachusetts' industrial legacy. Residents in these predominantly low-income and minority communities—nearly 29% of the state population—lack open space and recreational resources and often live side-by-side numerous existing large and small sources of pollution and old abandoned, contaminated sites, which can pose risks to public health and the environment."

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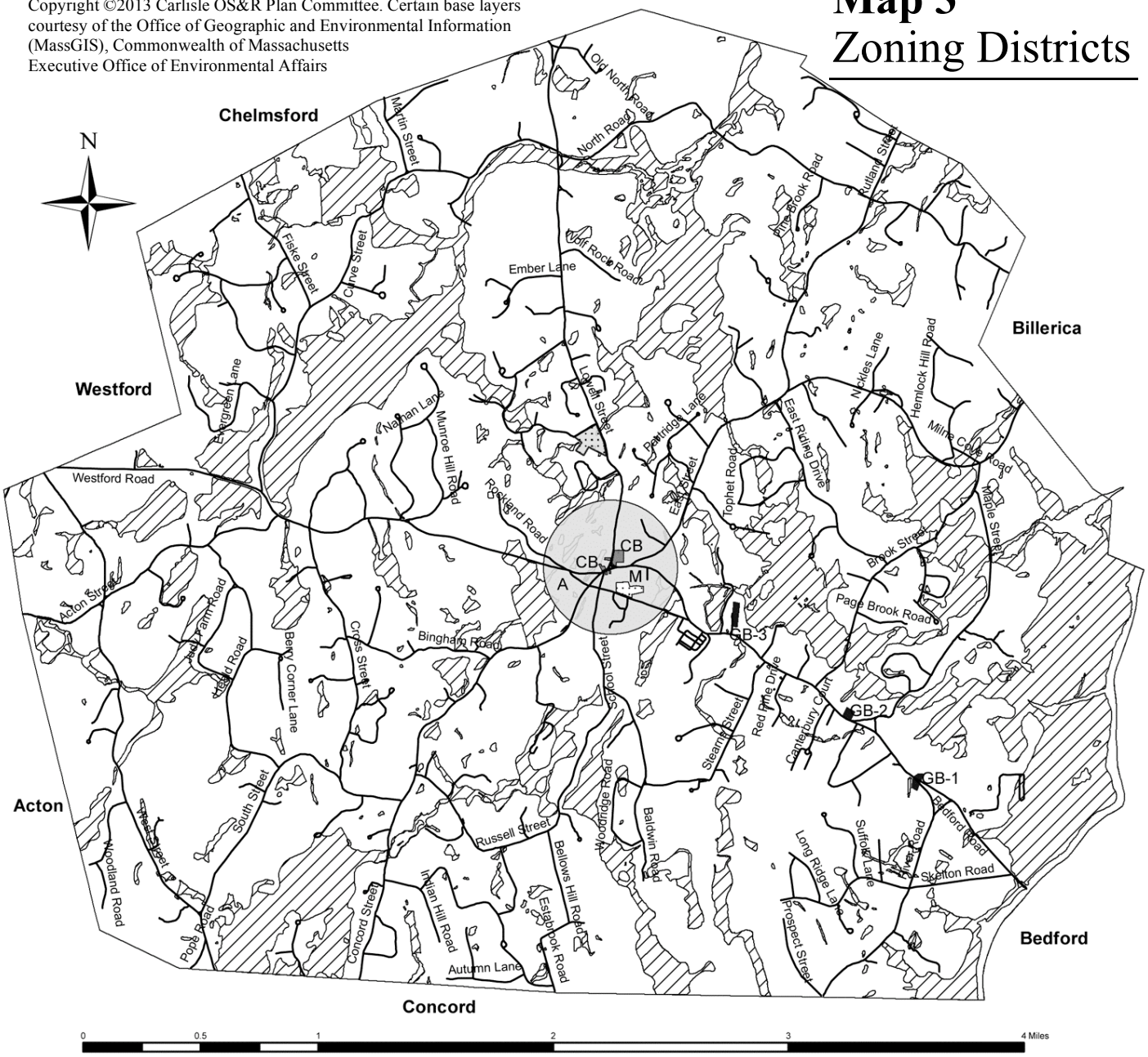
Map 3
Zoning Districts



Legend

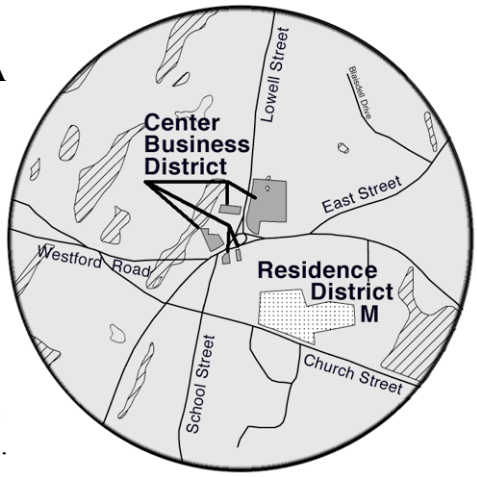
Roads

Zoning Districts

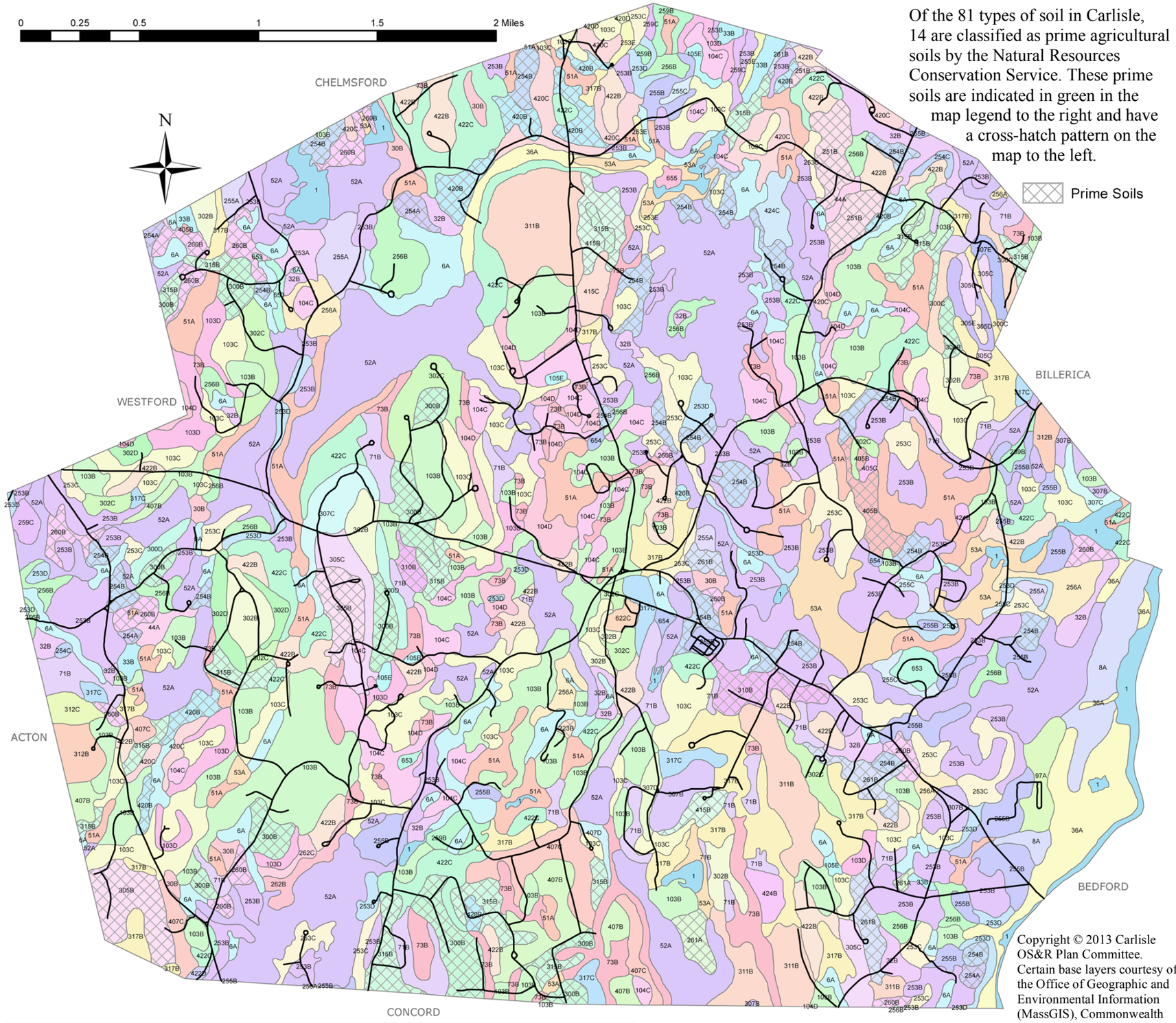
- General Residence District A
- General Residence District B
- Residence District M
- Center Business District
- General Business District
- Wetland Flood Hazard (Overlay District)
- Solar Photovoltaic Facility Overlay District

Detail of General Residence District A

General Residence District A is the area within a circle with a radius of 1500 feet from the Soldiers Monument in the Center of Town, excluding the Center Business District and Residence District M.



Map 4
Soils and Geologic Features



Of the 81 types of soil in Carlisle, 14 are classified as prime agricultural soils by the Natural Resources Conservation Service. These prime soils are indicated in green in the map legend to the right and have a cross-hatch pattern on the map to the left.

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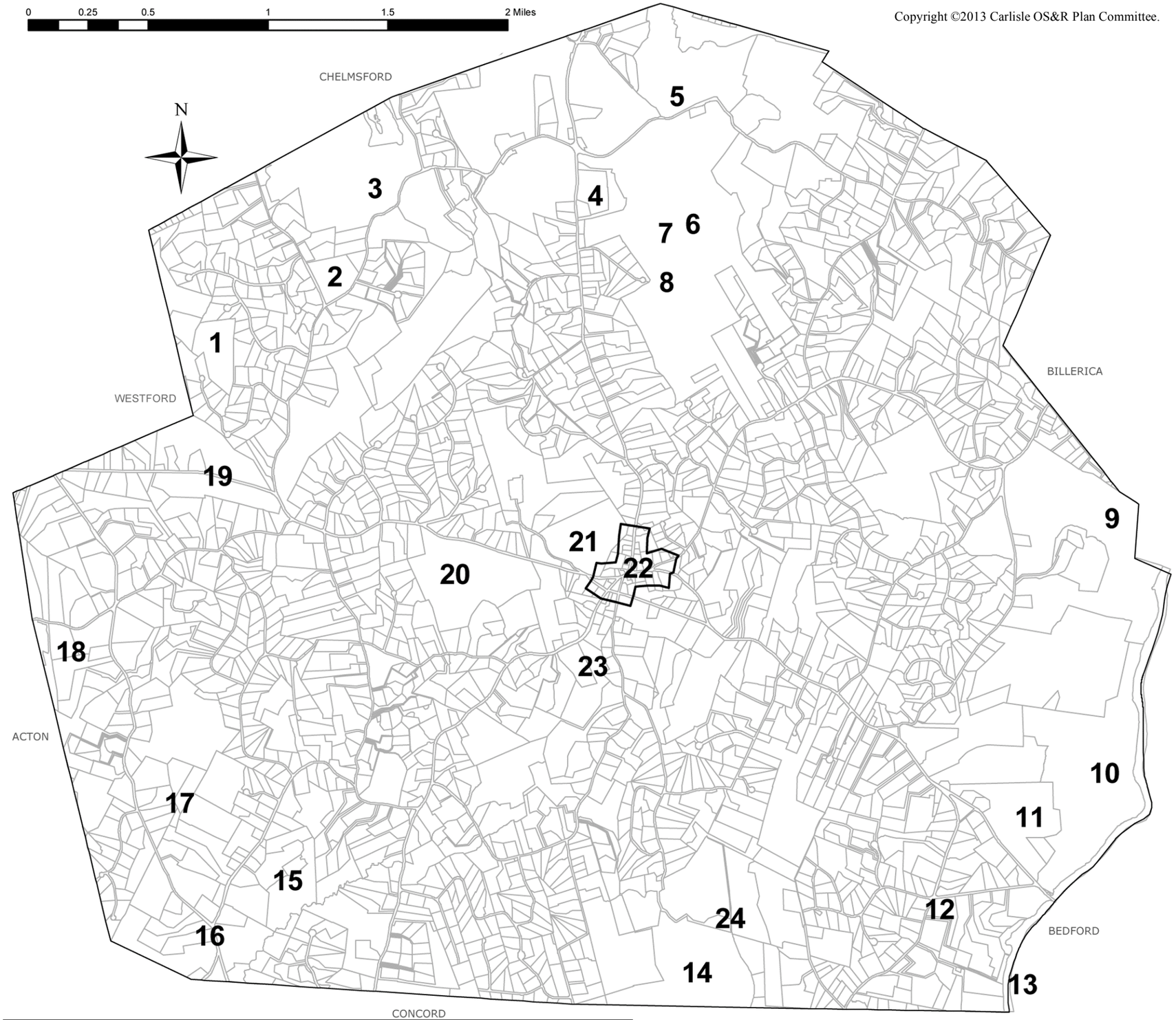
SOILS LEGEND FOR CARLISLE MASSACHUSETTS

1	Water
103B	Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes
103C	Charlton-Hollis-Rock outcrop complex, 8 to 15 percent slopes
103D	Charlton-Hollis-Rock outcrop complex, 15 to 25 percent slopes
104C	Hollis-Rock outcrop-Charlton complex, 3 to 15 percent slopes
104D	Hollis-Rock outcrop-Charlton complex, 15 to 25 percent slopes
105E	Rock outcrop-Hollis complex, 3 to 35 percent slopes
223B	Scio very fine sandy loam, 3 to 8 percent slopes
251B	Haven silt loam, 3 to 8 percent slopes
253A	Hinckley loamy sand, 0 to 3 percent slopes
253B	Hinckley loamy sand, 3 to 8 percent slopes
253C	Hinckley loamy sand, 8 to 15 percent slopes
253D	Hinckley loamy sand, 15 to 25 percent slopes
253E	Hinckley loamy sand, 25 to 35 percent slopes
254A	Merrimac fine sandy loam, 0 to 3 percent slopes
254B	Merrimac fine sandy loam, 3 to 8 percent slopes
254C	Merrimac fine sandy loam, 8 to 15 percent slopes
255A	Windsor loamy sand, 0 to 3 percent slopes
255B	Windsor loamy sand, 3 to 8 percent slopes
255C	Windsor loamy sand, 8 to 15 percent slopes
256A	Deerfield loamy sand, 0 to 3 percent slopes
256B	Deerfield loamy sand, 3 to 8 percent slopes
259B	Carver loamy coarse sand, 3 to 8 percent slopes
259C	Carver loamy coarse sand, 8 to 15 percent slopes
260B	Sudbury fine sandy loam, 3 to 8 percent slopes
261A	Tisbury silt loam, 0 to 3 percent slopes
261B	Tisbury silt loam, 3 to 8 percent slopes
262B	Quonset sandy loam, 3 to 8 percent slopes
262C	Quonset sandy loam, 8 to 15 percent slopes
300B	Montauk fine sandy loam, 3 to 8 percent slopes
300C	Montauk fine sandy loam, 8 to 15 percent slopes
300D	Montauk fine sandy loam, 15 to 25 percent slopes
302B	Montauk fine sandy loam, 3 to 8 percent slopes, extremely stony
302C	Montauk fine sandy loam, 8 to 15 percent slopes, extremely stony
302D	Montauk fine sandy loam, 15 to 25 percent slopes, extremely stony
305B	Paxton fine sandy loam, 3 to 8 percent slopes
305C	Paxton fine sandy loam, 8 to 15 percent slopes
305D	Paxton fine sandy loam, 15 to 25 percent slopes
305E	Paxton fine sandy loam, 25 to 35 percent slopes
307B	Paxton fine sandy loam, 3 to 8 percent slopes, extremely stony
307C	Paxton fine sandy loam, 8 to 15 percent slopes, extremely stony
307D	Paxton fine sandy loam, 15 to 25 percent slopes, extremely stony
307E	Paxton fine sandy loam, 25 to 35 percent slopes, extremely stony
30B	Raynham silt loam, 0 to 5 percent slopes
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes
311B	Woodbridge fine sandy loam, 3 to 8 percent slopes, very stony
312B	Woodbridge fine sandy loam, 3 to 8 percent slopes, extremely stony
312C	Woodbridge fine sandy loam, 8 to 15 percent slopes, extremely stony
315B	Scituate fine sandy loam, 3 to 8 percent slopes
317B	Scituate fine sandy loam, 3 to 8 percent slopes, extremely stony
317C	Scituate fine sandy loam, 8 to 15 percent slopes, extremely stony
32B	Wareham loamy fine sand, 0 to 5 percent slopes
33B	Raypol silt loam, 0 to 5 percent slopes
36A	Saco mucky silt loam, 0 to 1 percent slopes
405B	Charlton fine sandy loam, 3 to 8 percent slopes
405C	Charlton fine sandy loam, 8 to 15 percent slopes
407B	Charlton fine sandy loam, 3 to 8 percent slopes, extremely stony
407C	Charlton fine sandy loam, 8 to 15 percent slopes, extremely stony
407D	Charlton fine sandy loam, 15 to 25 percent slopes, extremely stony
415B	Narragansett silt loam, 3 to 8 percent slopes
415C	Narragansett silt loam, 8 to 15 percent slopes
420B	Canton fine sandy loam, 3 to 8 percent slopes
420C	Canton fine sandy loam, 8 to 15 percent slopes
420D	Canton fine sandy loam, 15 to 25 percent slopes
422B	Canton fine sandy loam, 3 to 8 percent slopes, extremely stony
422C	Canton fine sandy loam, 8 to 15 percent slopes, extremely stony
422D	Canton fine sandy loam, 15 to 25 percent slopes, extremely stony
424B	Canton fine sandy loam, 3 to 8 percent slopes, extremely bouldery
424C	Canton fine sandy loam, 8 to 15 percent slopes, extremely bouldery
44A	Birdsall mucky silt loam, 0 to 1 percent slopes
51A	Swansea muck, 0 to 1 percent slopes
52A	Freetown muck, 0 to 1 percent slopes
53A	Freetown muck, ponded, 0 to 1 percent slopes
622C	Paxton-Urban land complex, 3 to 15 percent slopes
653	Udorthents, sandy
654	Udorthents, loamy
655	Udorthents, wet substratum
6A	Scarboro mucky fine sandy loam, 0 to 3 percent slopes
71B	Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony
73B	Whitman fine sandy loam, 0 to 5 percent slopes, extremely stony
8A	Limerick silt loam, 0 to 3 percent slopes
97A	Suncook loamy sand, 0 to 3 percent slopes



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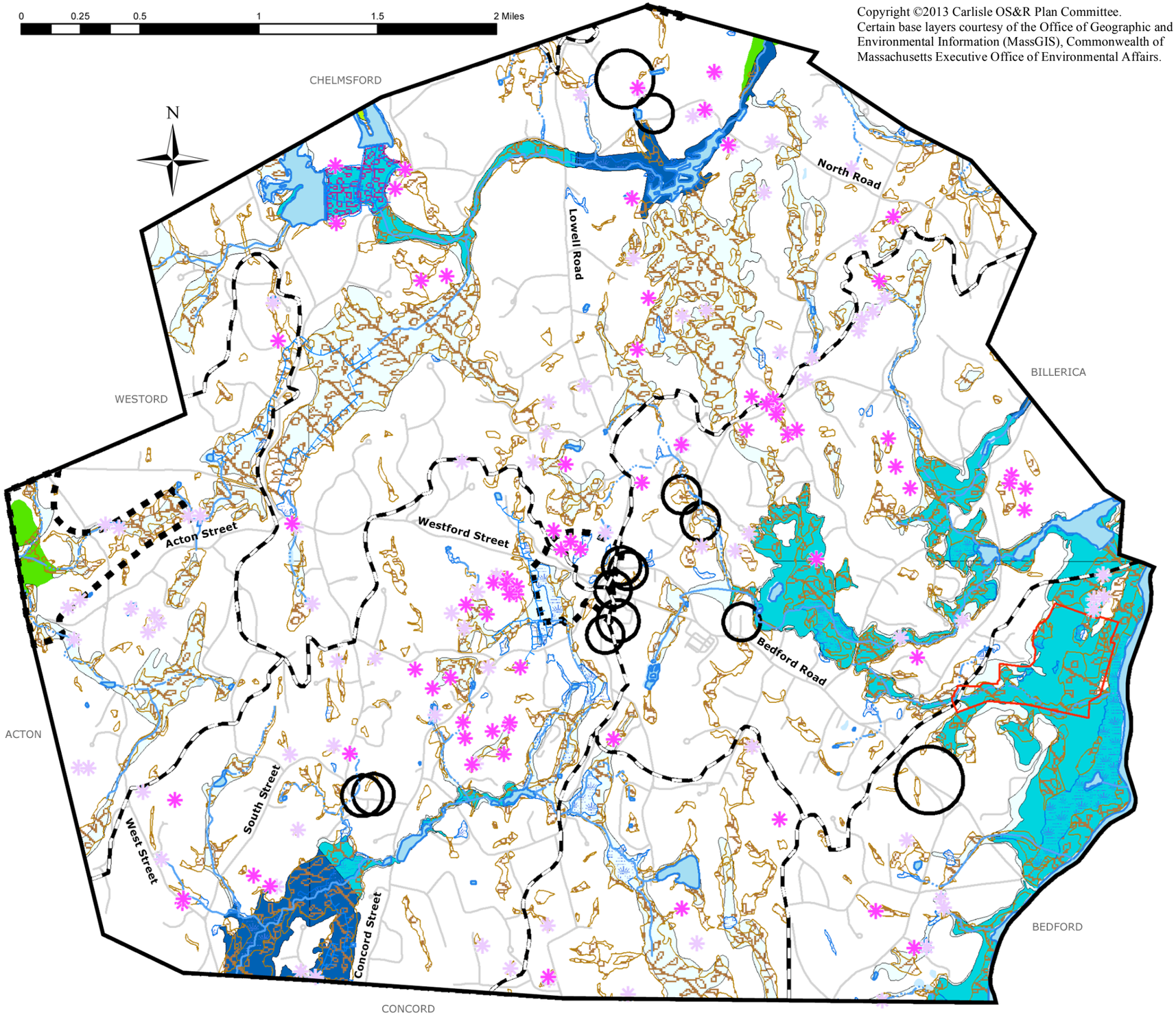
Map 5
Unique Features

1. **Carlisle Pines**
   Section of Great Brook Farm State Park (GBFSP), small stand of ancient white pines exceptional for their size and grandeur
2. **Hutchins and Robbins Fields**
   Protected open land under active agriculture
3. **Cranberry Bog**
   Northernmost active cranberry bog in Massachusetts, on protected open land
4. **Black Brook Farm**
   Exceptional open field, agricultural, and historic building vista along Lowell Road adjacent to GBFSP
5. **Great Brook Farm State Park**
   Includes an active dairy farm, a x-country skiing concession, an ice cream stand, open vistas, and miles of trails
6. **Tophet Swamp**
   Extensive wooded wetland
7. **Glacial Esker**
   Impressive example of ice age action within GBFSP
8. **Wolf Rock**
   Large glacial erratic
9. **Greenough Pond**
   Scenic water body on Greenough Conservation Land
10. **Great Meadows National Wildlife Refuge**
    (GMNWR) Open and wooded area bordering the Concord River
11. **Foss Farm**
    Woods and fields with community gardens, trails, pony rings, dog sled trails, x-country skiing
12. **Elliott Farm**
    Historic farm property with scenic bluff overlooking the Concord River and adjacent to GMNWR
13. **Concord River**
    Extensive riverine environment designated a Wild and Scenic River
14. **Estabrook Woods**
    With its surrounding protected properties in both Carlisle and Concord, the most extensive wild forested region in eastern Massachusetts
15. **Benfield Lands**
    Protected open field with a vista including the Spencer Brook meadows and a wildlife observation platform
16. **Lime Kiln**
    Historic lime kiln and stone pit located at the intersection of West and South Streets
17. **Twin Peaks Vernal Pool**
    Scenic vernal pool located near the Twin Peaks trail
18. **Valentine Farm**
    Privately owned large farm with hay fields and grazing cattle
19. **Sorli Farm**
    Privately owned large farm featuring bucolic vistas
20. **Towle Field**
    Large protected open fields with bordering woods including hiking & x-country skiing trails & a fine example of a turtle rock
21. **Castle Rock**
    A large outcropping on the Town-owned Conant Land, which also features extensive woodland with hiking trails
22. **Historic District**
    Area in the Town Center preserving the rural appearance of Carlisle's hub
23. **Clark Farm**
    Exceptional open-field vista near the Town Center
24. **Two Rod Road**
    A trail along an old road to Concord dating from the early 1700s, laid out to specifications that it be two rods wide

Map 6
Water Resources



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Legend

- Roads
- Drainage Sub-basins - Dec 2007

Hydrography 1:25,000 - Feb 2010

- Perennial Stream
- Intermittent Stream
- Shoreline
- Ditch/Canal

Wellhead Protection Areas - Jul 2011

- Zone 1
- Zone 2

Public Water Supply Water Rights Area

- (O'Rourke)

DEP Wetlands 1:12,000 - Jan 2009

- Marsh/Bog
- Wooded marsh
- Cranberry Bog
- Open Water

FEMA Q3 Flood Zones - Jul 1997

- A
- AE
- X500
- NHESP Certified Vernal Pools
- Potential Vernal Pools

Aquifers - July 2007

- Low Yield (< 50 gpm)
- Medium Yield (50-300 gpm)

Key to FEMA Q3 Flood data

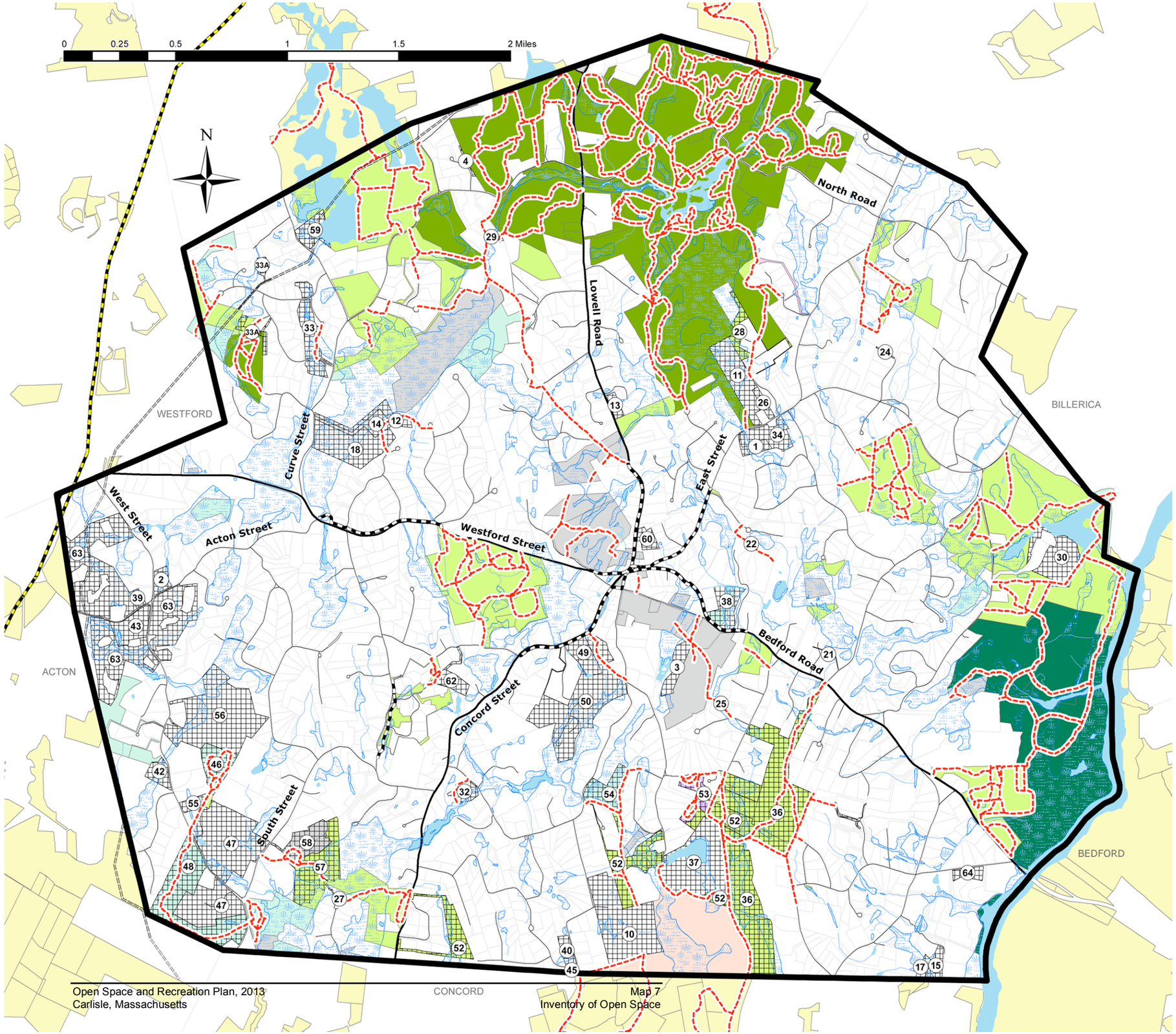
A	An area inundated by 100-year flooding for which no BFEs (Base Flood Elevations) have been determined
AE	An area inundated by 100-year flooding for which BFEs have been determined
X500	An area inundated by 500-year flooding; an area inundated by 1500-year flooding with average depths of less than 1 foot or with drainage areas less than 1 square mile; or an area protected by levees from 100-year flooding

Map 7
Inventory of Open Space

Protected open spaces are lands that are permanently committed for conservation or recreation purposes or both. They include public holdings of the Carlisle Conservation Commission and the Commonwealth and Federal governments and private holdings of the Carlisle Conservation Foundation (CCF), Harvard University, and The Trustees of Reservations.

Protected open space also includes private properties with permanent conservation restrictions (CRs) and open space created by conservation cluster developments.

Unprotected open space consists of public and private properties that are not designated for conservation or recreation and includes land in Chapter 61, 61A, or 61B.



Legend

- Pathways
- Bruce Freeman Rail Trail
- Gas Pipeline
- Trails
- Water
- Carlisle Conservation Foundation
- Commonwealth of MA - Great Brook Farm SP
- Harvard University - Estabrook Woods
- Homeowners Assoc - Great Brook Estates
- Town of Carlisle - Conservation Commission
- The Trustees of Reservations
- United States - Great Meadows NWR
- Conservation Restriction
- Municipal Use/Unprotected Town-owned
- Protected Out of Town

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Map 8
Seven-Year Action Plan

High-priority initiatives from Section 9 of the Town of Carlisle 2013 Open Space and Recreation Plan are shown on this map.

CRANBERRY BOG
Facilitate long-term extension of Cranberry Bog Agricultural Lease, *2015*; Coordinate with Chelmsford re: water rights *2013-2019*; Work to make Bog paths accessible to OPDMDs, *2015-2019*

NORTHWEST CORNER
Seek trail connections from Carlisle Pines State Forest to the MacAfee Trail, with connection to Westford and Chelmsford trails and the Bruce Freeman Rail Trail, *2013-2018*

CONANT LAND
Seek permanent CR, *2013-2017*

TOWN COMMON
Develop ongoing maintenance plan, *2013-2015*

SORLI FARM
Work with landowners to protect the vistas and make trail connections to nearby protected lands, *2013-2019*

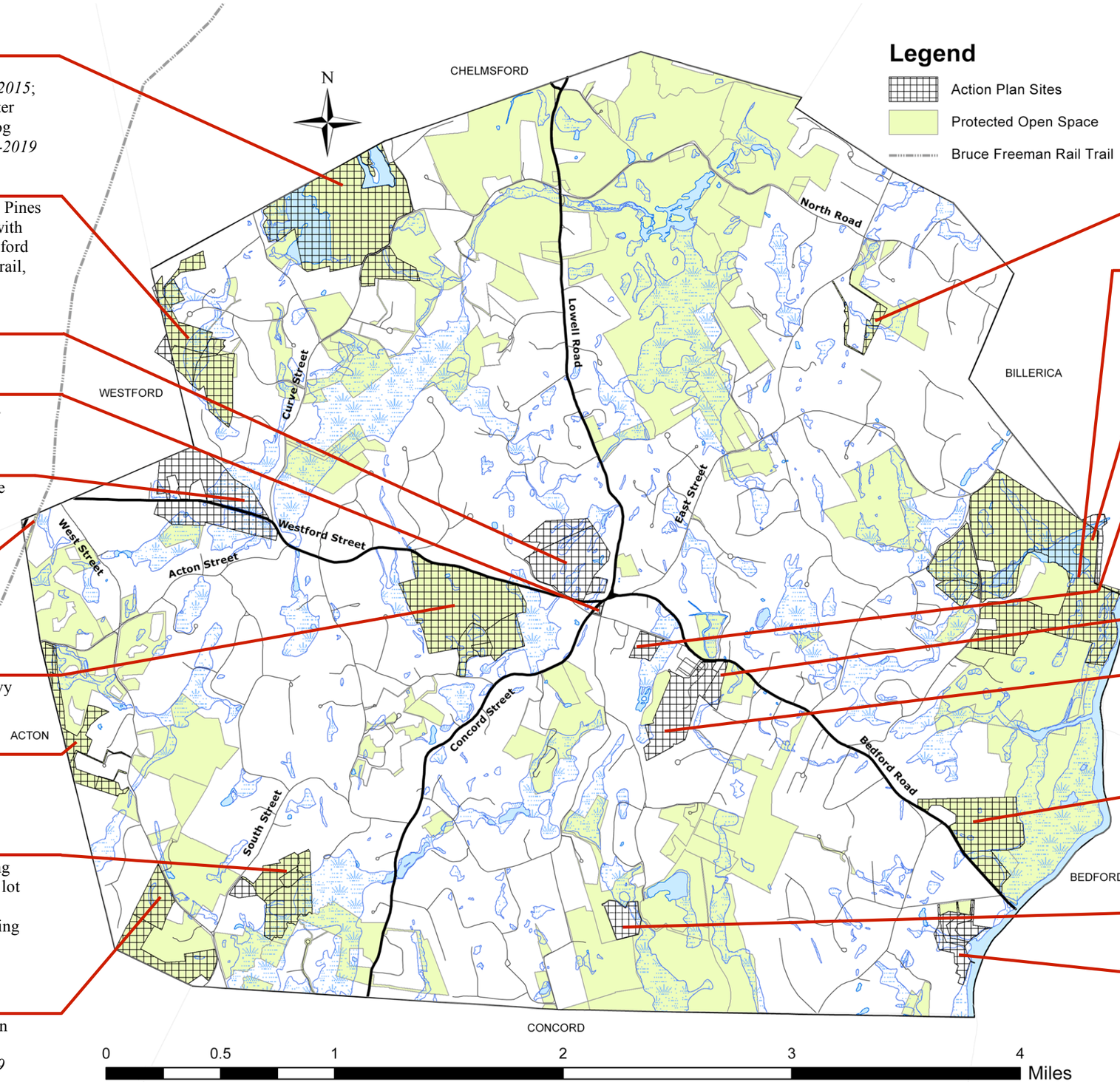
BRUCE FREEMAN RAIL TRAIL
Support completion of trail, work with neighboring towns for more parking, *2014-2015*

TOWLE LAND
Continue efforts to control poison ivy and invasive buckthorn, *2013-2019*

WESTERN BORDER
Seek trail connections from these CCF lands to Acton's Spring Hill and Robbins Mill areas, *2013-2019*

BENFIELD CONSERVATION LAND
Complete trail linkages from housing development and dedicated parking lot after completion of housing, *2014;* Coordinate responsibilities for funding maintenance of land with housing stakeholders, *2013-2019*

BEN'S WOODS
Seek trail connection to conservation land in Acton, *2013-2014;* Monitor invasives control project, *2013-2019*



RANGEWAY CONSERVATION LAND
Construct new boardwalk for trail, *2013*

GREENOUGH DAM
Decide whether to repair or remove dam, then obtain funding, through CPA if feasible, to carry out decision, *2013-2019*

GREENOUGH BARN
Develop Management Plan for preservation, safety, and protection from vandalism, *2013-2014*

SPALDING FIELD
Use CPA funding to construct boardwalk to link school playing fields to Banta-Davis recreation fields, *2014*

GOFF PROPERTY
Evaluate site for possible Community Center or Rec Center or other recreation facilities, *2013-2014*

BANTA-DAVIS LAND
Evaluate feasibility for needed expansion of recreation fields and facilities, including one all-purpose artificial turf field and four tennis courts, *2013*

FOSS FARM
Monitor invasives control and edge restoration projects, *2013-2019*; Construct new boardwalk for new trail, *completed 2013*

FLANNERY PROPERTY
Seek protection of key parcel, *2017-2019*

ELLIOTT PROPERTY
Complete parking and trails, and coordinate with USFWS on possible canoe landing, *2013-2015*

OPDMD = Other Power-Driven Mobility Device
CR = Conservation Restriction
CCF = Carlisle Conservation Foundation
CPA = Community Preservation Act
USFWS = United States Fish and Wildlife Service

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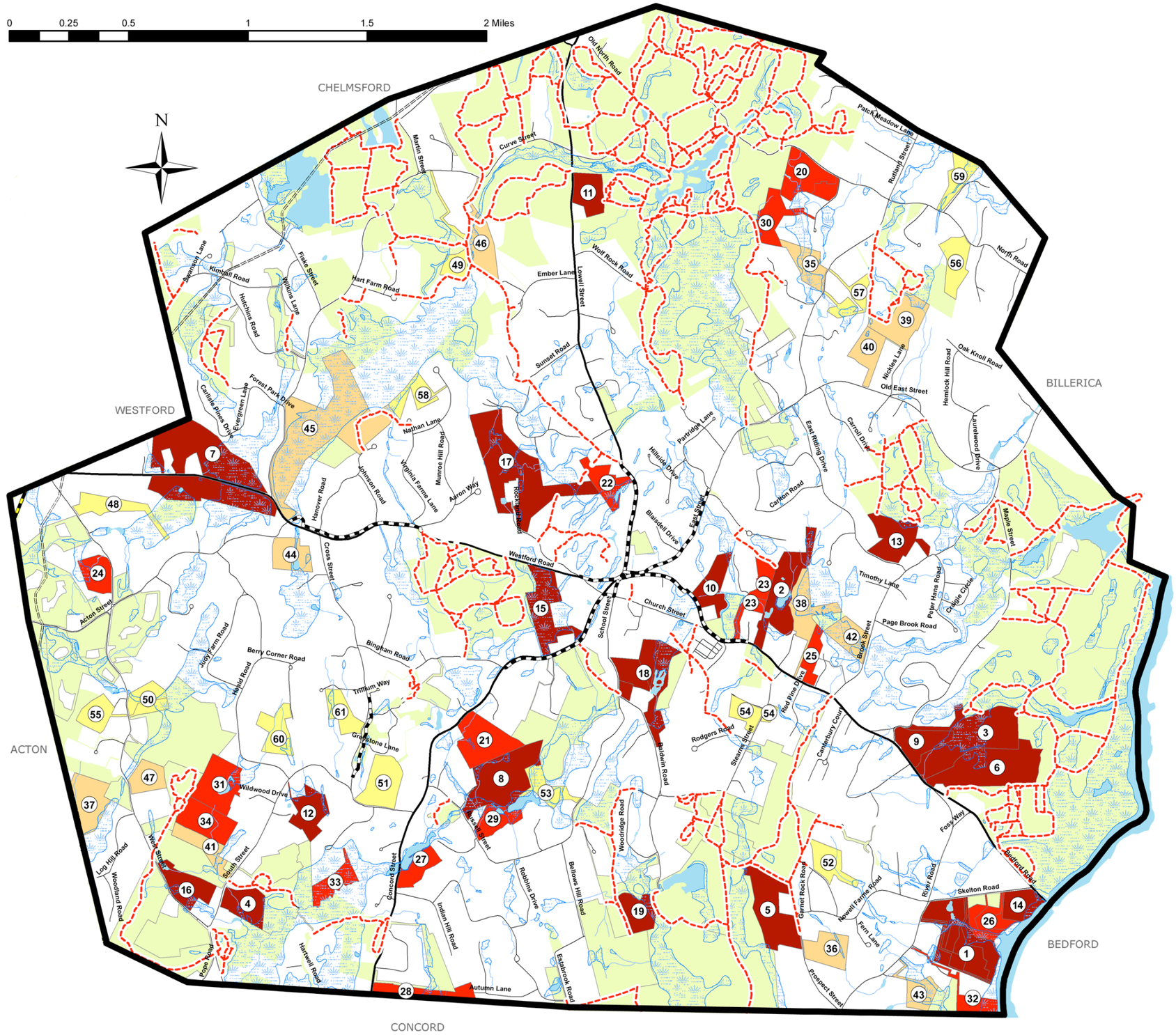

Map 9
Unprotected Private Parcels (≥10 acres) Priority Rankings

Much of Carlisle's character is determined by the large parcels of open space that are not yet protected in any way. The goal to maintain the town's rural character can be accomplished by protecting selected vulnerable open spaces. Privately owned parcels of 10 acres or more were inventoried and ranked based on established criteria for each of the three previous OS&R reports and again for the 2013 report. The large parcels (10 acres or more) of unprotected open space remaining in Carlisle are inventoried and ranked in Table 7: Seven-Year Action Plan Property Protection Priority List and shown on the map at left. The Map ID numbers correspond to the order of the parcels in Table 7.

Legend

- Priority 1 (Parcels 1-19)
- Priority 2 (Parcels 20-34)
- Priority 3 (Parcels 35-47)
- Priority 4 (Parcels 48-61)
- Pathways
- Bruce Freeman Rail Trail
- Gas Pipeline
- Trails
- Protected Open Space

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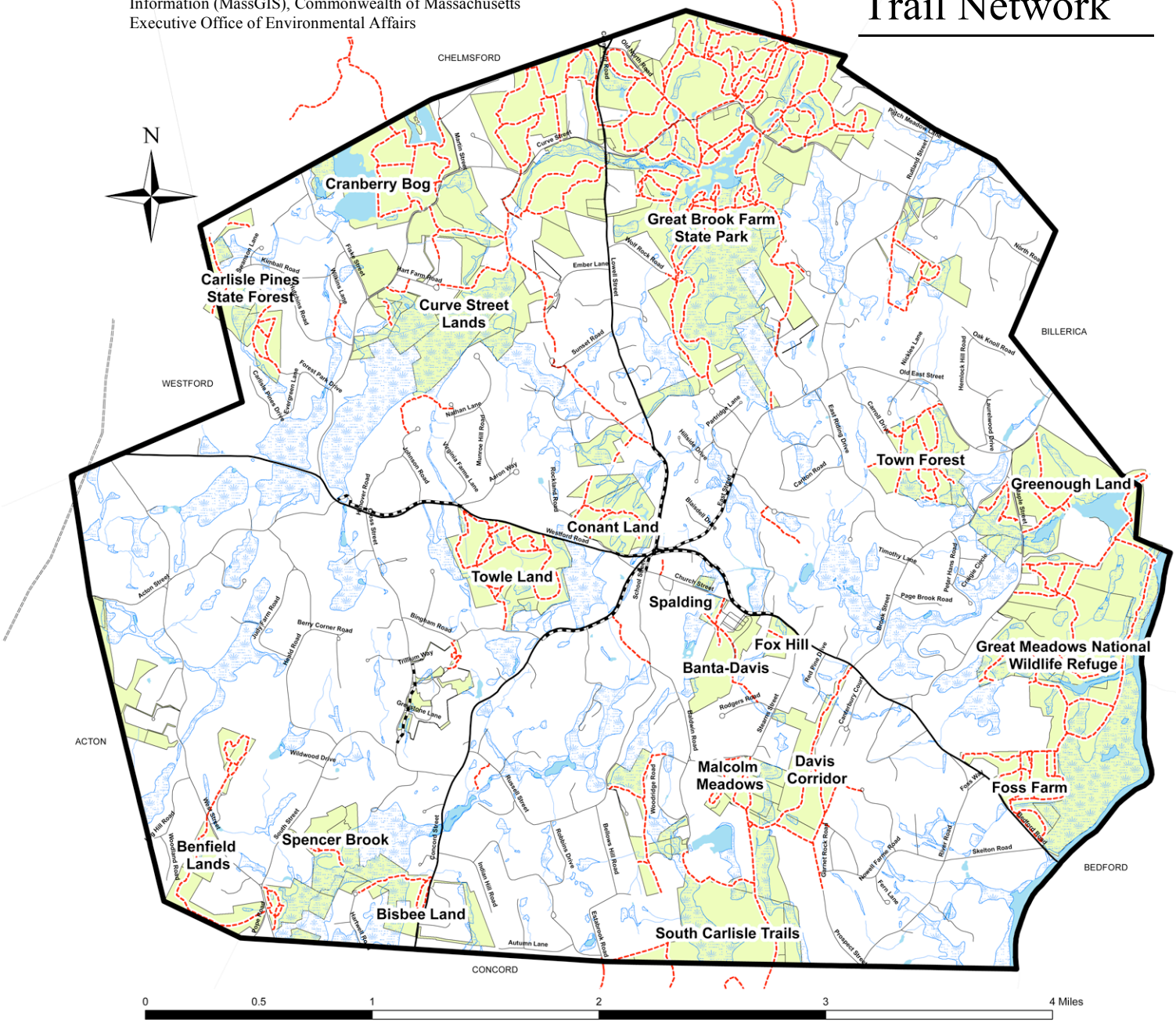
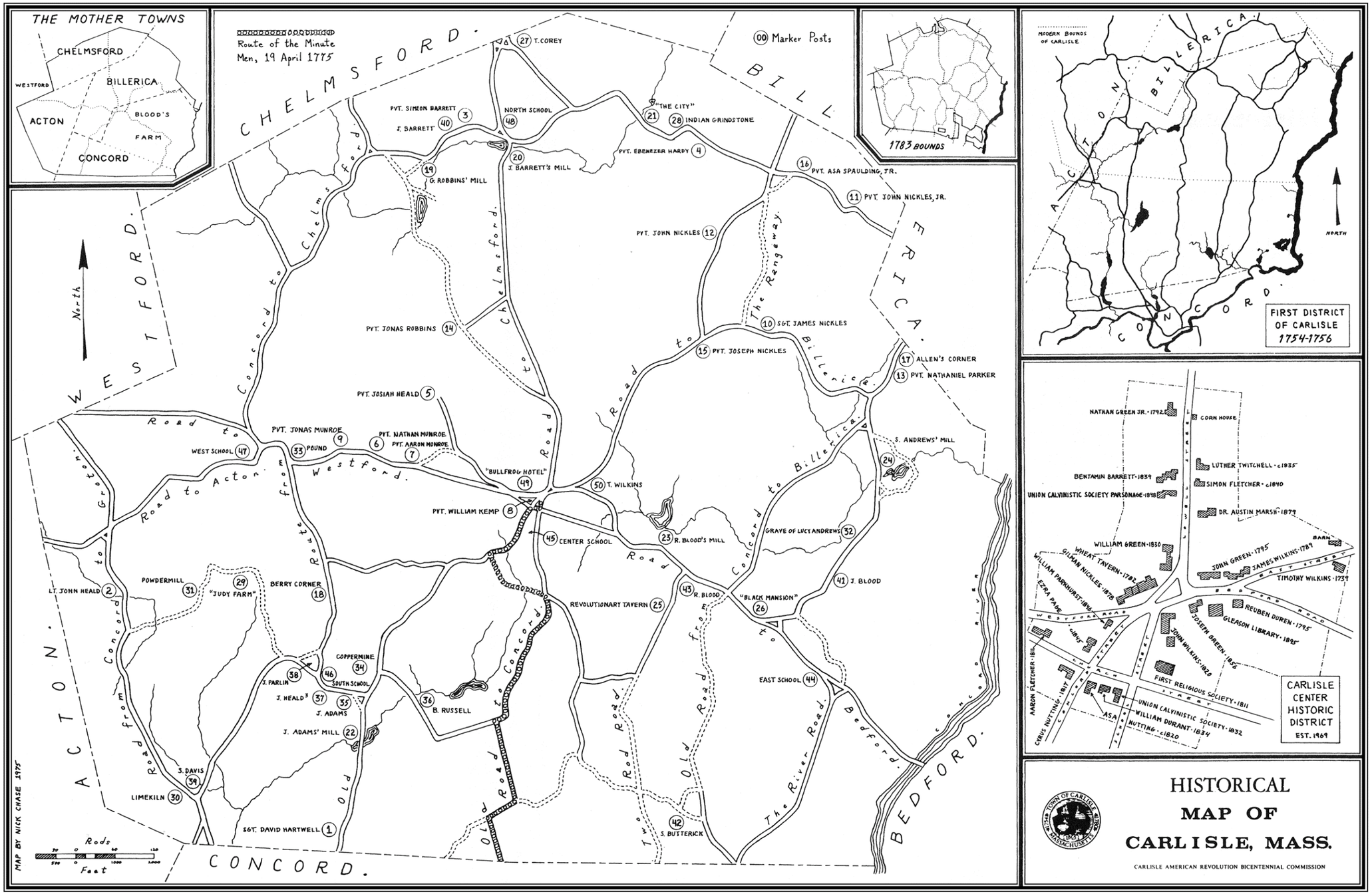
Map 10
Trail Network



Legend

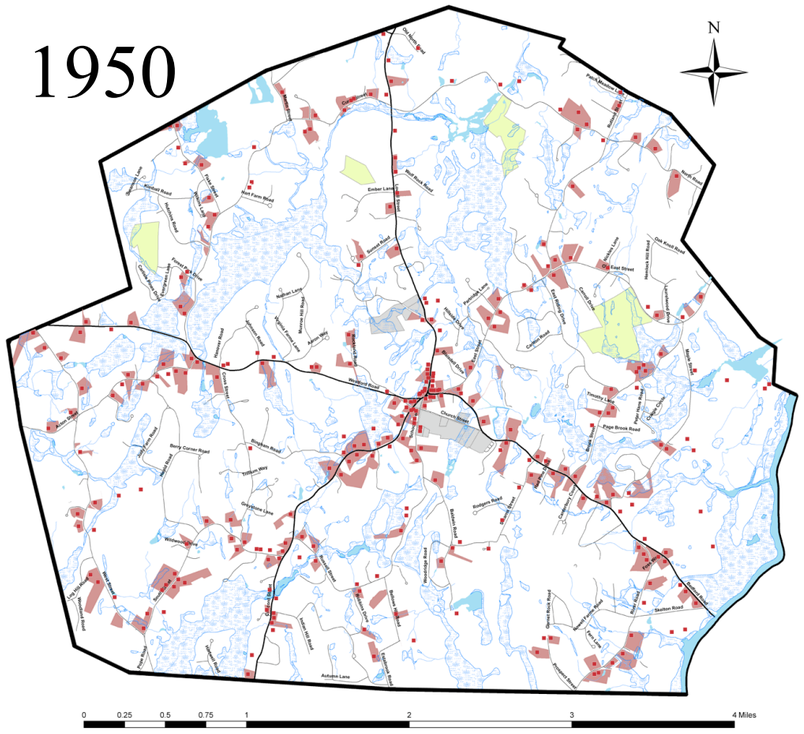
- Pathways
- Bruce Freeman Rail Trail
- Carlisle Trails

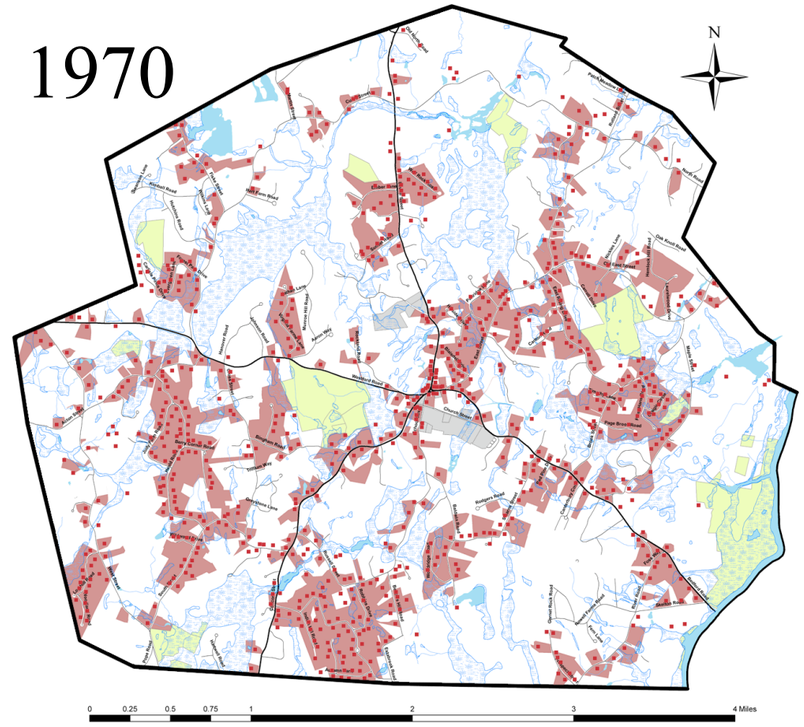
The Carlisle Trails Committee extensively revised its trails book, *Trails in Carlisle*, in 2010. All trails were walked and entered on the GIS (Geographic Information System) using GPS (Global Positioning System) technology. Special features of trails and land parcels are noted in the text. The trail book is available at Carlisle Town Hall and at Ferns Country Store. Trail maps are also available electronically from the Trails Committee's website, *http://CarlisleTrails.pbworks.com*.

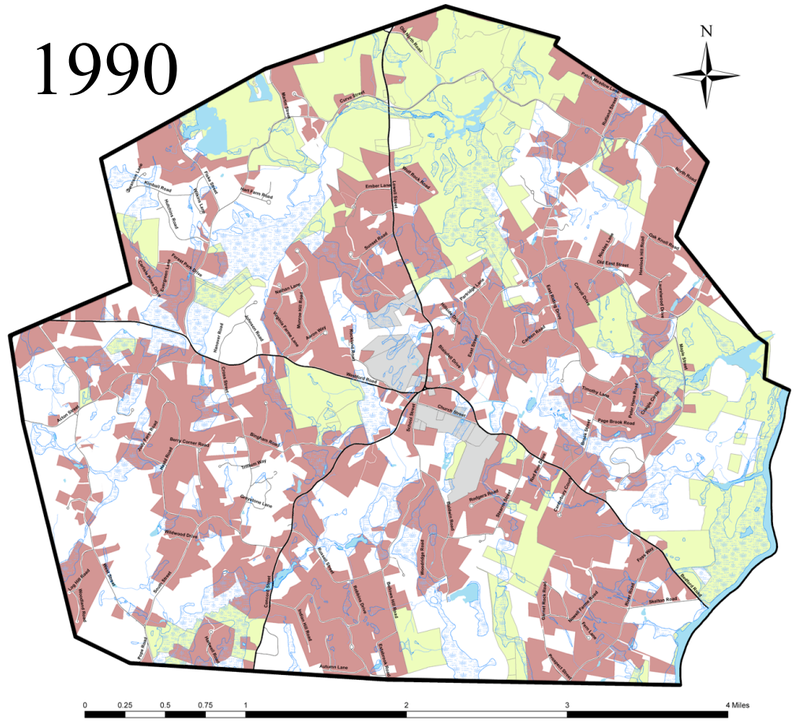


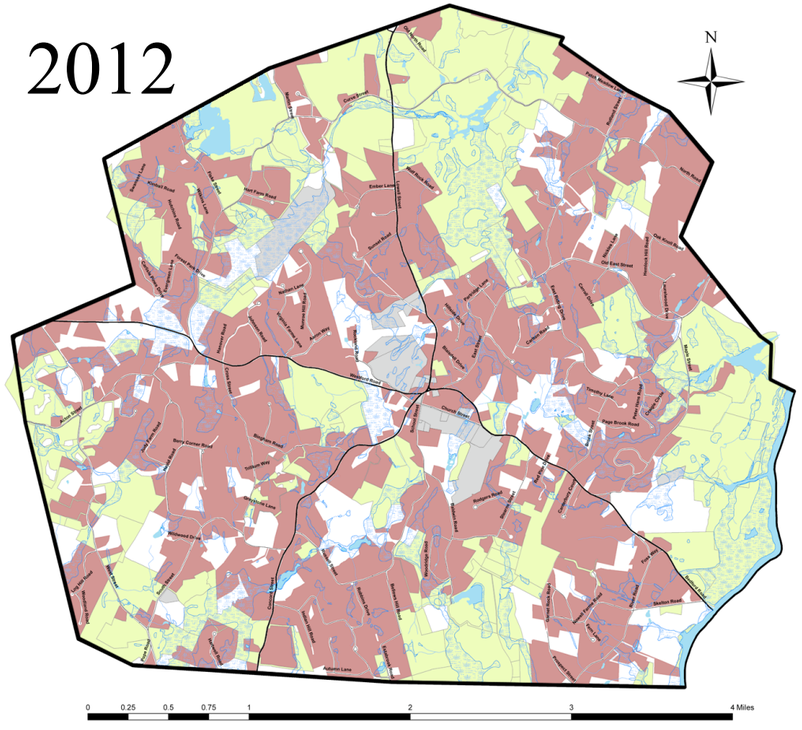
This map was prepared by Edward N. Chase for the Carlisle American Revolution Bicentennial Commission in 1975. It shows, clockwise from upper left, the "Mother Towns," the neighboring towns from which Carlisle was created; historic roads, the Route of the Minutemen, 19 April 1775, and 50 historic marker posts installed by the Bicentennial Commission; the 1783 Town bounds; the First District of Carlisle, 1754-1756; and the Carlisle Center Historic District, established in 1969.

Map courtesy of the Carlisle Historical Society









Map 12
Development and Land Protection Over Time

These maps show the transformation of Carlisle from a mostly forested and rural farming community with a population of less than 900 in 1950 to a population of about 5,000 in 2012. The maps also show the results of efforts of federal, state, and local governments as well as local private conservation organizations to set aside parcels for conservation purposes. As development has increased over time, so has the amount of land permanently protected as open space. Along with state and federally protected lands, Carlisle in 2012 has 34% or 3,362 of its 9,913 acres protected from development.

The 2012 map can be used as a planning tool to assess the parcels still virtually undeveloped as to their development potential and their importance as potentially protected open space to preserve water and other natural resources and to create linkages in wildlife corridors and trails.

Note: These four maps are based on the best available data from the Assessors' listings of earliest sales by parcel and from Planning Board files of dates of subdivision approvals. Development data from earlier years is harder to track and therefore somewhat less reliable. Accordingly, the parcels on the 1950 and 1970 maps have been supplemented with approximate locations of houses (small red squares) taken from U.S. Geological Survey (U.S.G.S.) maps, circa 1950 and 1970, respectively.

In addition, the maps are based on a current (2012) parcel database, so a large tract that may have had a single dwelling, perhaps a farmhouse, in 1950, may be shown as what is the current smaller building lot in approximately the location of the original dwelling (confirmed in many cases by the square from the U.S.G.S. maps). The 1950 map actually gives a more accurate picture of the extent of development because large parcels in the 1950s and earlier were mostly wooded or farmland. A typical large parcel may have been subdivided one or more times in the intervening half century as the town has become more densely developed, from less than 60 people per square mile in 1950 to more than five times that density today.

The 2012 map shows recently subdivided tracts as fully developed; although some lots in these developments remain unbuilt, the land has been transformed through development infrastructure of roads and stormwater drainage. All currently unprotected parcels of 10 acres or more are shown as undeveloped, even though they may have a single family home, due to their development potential, whether through subdivision or as a 40B.

All four maps show current (2012) roads to aid with orientation.

Legend

- Developed parcel as of date of map
- Protected parcel as of date of map
- Municipal parcel as of date of map

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