



EXISTING LAND USE

Northwood Master Plan January 2023

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Cover images show a view west toward NH Route 4. The 1840 Greek Revival style Congregational Church, visible in both images, provides a common reference. The black and white photo dates to the mid-19th century and reveals the extent to which the land had been cleared for agriculture. The color photo was shot in 2022 and shows the extent to which the land has been re-forested, as well as the expansion of Coe-Brown Academy onto this former pasture land. Note that Faculty Way appears to align with an old cart path that was lined with stone walls. The mid-19th century photo was published in *History of Nottingham, Deerfield, and Northwood*, <u>Elliott Colby Cogswell</u>, Manchester, 1878, page 571. Bottom photo credit: Tom Morgan.

LAND USE SNAPSHOT

A summary of land use data described in the Existing Land Use Chapter. AREA Total area: 19,357 acres (30.2 sq mi) Land: 17,839 (27.9 sq mi) Water: 1,439 acres (2.2 sq mi)

High: 1,150 ft Low: 223 ft ELEVATION



- 3. NH Geodata Portal, Rockingham County Soil Survey, pg 11
- 4. Northwood Land Use Department, pg 11
- 5. NH Geodata Portal, 1998 and 2015 Land Use Layers, pg 14-15
- 7. American Community Survey 5-Year Estimates, pg 14 8. NH Geodata Portal, 2015 Land Use Layer, NH Geodata Portal, Participan Cauchy Cold Communication (1997)
- Rockinham County Soil Survey, Town of Northwood Overlay Districts Map, Town of Northwood Zoning Ordinance, pg 19-20

A BRIEF HISTORY OF LAND USE IN NORTHWOOD

Early History

The area that is present day Northwood was settled by the Penacook, an Algonquian speaking people who arrived in the area 9,000 to 12,000 years ago. After contact with European settlers in the early 17th century, disease led to the loss of approximately 90% of the Penacook population.

New Hampshire's old growth Eastern White Pine attracted Britain's royal navy and English settlers from the coastal region of the state frequented the Northwood vicinity for timber. The first permanent settlers of English descent arrived in 1763. In 1773, the Town of Northwood was incorporated.

Northwood's new arrivals set to work clearing the forests to support agriculture. By the early 19th century, most of Northwood was deforested. In 1817, Merrill's Gazetteer of NH noted the lack of forests made it possible to see vessels entering the Piscataqua harbor 27 miles away from Northwood.¹ The vista shown in the top cover image offers a glimpse of the deforested countryside that dominated the mid-19th century landscape, one that was similar to much of rural New England during this era.

The region's soil was well suited for grazing and growing crops like corn and grain.² Improved farmland that supported livestock, crops, and forestry accounted for 58% of the town's area in 1870.³

During the decades that followed the town's establishment, settlement coalesced around four distinct villages. Three of these villages, East Northwood, Northwood Center, and Northwood Ridge, are situated along the 8-mile stretch of turnpike that bisects the community. The fourth village, Northwood Narrows, named for its location between two streams, is situated just north of the turnpike (Figures 1 and 2).



Figure 1. View of Northwood Narrows, looking northeast (Tom Morgan).



Figure 2. Location of Northwood's four villages







Figure 4. Topographical map of Northwood (Source: US Geological Survey, 1917)

New Hampshire's First Turnpike

New Hampshire's first turnpike, known today as Route 4, was completed in 1800, following the construction of the Piscataqua Bridge between Newington and Durham via Goat Island in 1794. It established a reliable roadway connecting Portsmouth with Concord.⁴ Eight miles of the turnpike runs through Northwood.

Northwood's built environment and businesses were centrally located around the turnpike corridor, as shown in the 1892 image in Figure 3.

Over 220 years after the turnpike's completion, this lengthy transportation corridor continues to shape land use in Northwood and the region.

A 1917 topographical map reveals that most of Northwood's buildings continued to be concentrated alongside the turnpike (Figure 4). Unlike most rural NH towns of this era (1917) Northwood is unusual in the way so many of the town's buildings abut the turnpike. In other towns, the buildings are more dispersed.

Note also that seasonal camps are visible on the north shore of Northwood Lake, then known as Suncook Pond. This map shows little evidence of seasonal dwellings along the shorelines of other ponds and lakes in the town during this era.

During the 20th century, most of the agricultural acreage had reverted to forest. By 2020, some 13,494 acres, or 70% of Northwood, was forested.⁵



During the 1980's and 1990's, Northwood became a destination for antique enthusiasts. The turnpike corridor from Epson to Lee was dubbed Antique Alley. Little investment in infrastructure was required, as the antique business was well suited to Northwood's existing inventory of 18th & 19th century buildings that line Route 4.

In the 1980s, a Route 4 bypass was proposed, but funding from the state was not secured. As a result, the turnpike was not rerouted and has continued to shape the community and development along the corridor.

Located 20 to 25 miles from several southern New Hampshire population

centers, Northwood's rural character proved appealing as a residential setting for those willing to commute 30 to 40 minutes daily to jobs in Manchester, Concord, Rochester, Dover and Portsmouth. Several residential developments date to this period, as do hundreds of new homes that line Northwood's country roads.

The unprecedented growth in singlefamily residential buildings was the most noticeable change in land use during the late 20th C. By the end of the century, industry was largely gone, commercial establishments continued to line the turnpike hoping to attract a percentage of the 12,000+ motorists who pass by each day, and agriculture continued to thrive, albeit not to the extent of its 19th century heyday.

Population and land use trends since 1970 are summarized in Figure 5.





TOPOGRAPHY & WATER BODIES

The elevation of Northwood ranges from 233 feet above sea level to a maximum of 1,150 feet above sea level at the highest point in town, Saddleback Mountain. The Town Hall is situated 558 feet above sea level. A topographic map of Northwood is shown in Figure 6.

Northwood Ridge is situated along the boundary between two of the Granite State's principal watersheds, the Merrimack to the west and Saco Watershed, which includes the Salmon Falls-Piscataqua (Coastal) watershed to east.⁶ Shown in Figure 7 are the Lamprey and Cocheco River The situation of this town is pleasant, and more elevated than any land between it and the sea. From its height, vessels entering the Piscataqua harbour may be seen with the assistance of glasses. From this place the light house at Portsmouth bears S. O¹/₂ ° E. and the highest mountain in Gilford N. 16¹/₂ ° W.

Source: *A Gazetteer Of The State Of New Hampshire*, Eliphalet & <u>Phinehas Merrill</u>, Exeter, 1817, page 173.

subwatersheds (HUC (Hydrologic Unit Code) 10), which are part of the Coastal Watershed and the Suncook River subwatersheds, which lies within the Merrimack River watershed. The headwaters of the Lamprey River flow from Meadow Lake, while Bow Lake serves the same function for the Isinglass River, which flows into the Cocheco River. Five of Northwood's lakes and ponds drain west to the Suncook River.

Lakes and ponds account for approximately 1,440 acres (2.3 sq mi) or 7.4% of the area of the town.⁷ The largest body of water in Northwood is Northwood Lake (653 acres), known historically as Suncook Pond. Wetlands account for an additional 7.8%. Water depth in these lakes in ponds ranges from 20 feet in Northwood Lake to 60 feet in Pleasant Lake, which lies alongside Northwood's western perimeter.





Figure 6. Topographic map (Source: ESRI National Geographic Basemap, NH Geodata Portal)



Watersheds, Lakes & Ponds

Legend



Figure 7. Map of watersheds, lakes, and ponds (Source: NH Geodata Portal)



LAND USE

Overview

Northwood's total area is 30.2 square miles (19,357 acres). The land area accounts for 28.1 square miles (17,984 acres), or 93% of the town. Forest land is the dominant natural feature, comprising over 65% of the area of the town (Table I, Figure 8).⁸ Approximately 14% of the land area is developed, with residential land – primarily single-family homes – accounting for 10% of the land.⁹

Table I. Land use in Northwood	1		
Land Use	Acres	Sq. Miles	% of Total Area
Forest Land	12,639.2	19.7	65.3%
Residential	1,961.7	3.1	10.1%
Wetlands	1,518.1	2.4	7.8%
Water	1,439.3	2.2	7.4%
Agriculture	674.8	1.1	3.5%
Transportation, Communications, and Utilities	354.1	0.6	1.8%
Barren	335.5	0.5	1.7%
Outdoor and Other Urban and Built-Up Land	201.6	0.3	1.0%
Commercial, Services, and Institutional	162.7	0.3	0.8%
Brush or Transitional between Open and Forested	63.1	0.1	0.3%
Vacant Land	5.0	0.0	0.0%
Industrial and Commercial Complexes	1.9	0.0	0.0%
TOTAL	19,357.0	30.2	100%

Table 1. Land use in Northwood

Source: NH Geodata Portal 2015 Land Use layer



Land Use (2015) Legend



Figure 8. Land use map (Source: NH Geodata Portal, 2015 Land Use layer)

Conservation Land

There are approximately 3,140 acres (4.9 sq mi) of conservation land in Northwood, accounting for 17% of the land area of the town (Figure 9). A total of 50 parcels are conserved. Most of these parcels (77%) are held in fee ownership and the remainder are protected through conservation easements.¹⁰ State-owned land comprises approximately 43% of the area of conservation land in Northwood, while Town-owned land accounts for

24% (Figure 10).¹¹ Northwood Meadows State Park is the largest landowner of conservation land (Table 2).

The community is fortunate to have the Northwood Area Land Management Collaborative (NALMC), a voluntary partnership between public and private neighbors. NALMC provides nature based outreach and collaborates on stewardship projects, has been active for the last two decades.





Table 2. Five largest owners of conservation land

Landowner	Acres of Conservation Land	Sq. Miles of Conservation Land
Northwood Meadows State Park	666	1.0
Forest Peters Wildlife Management Area	461	0.7
Coe-Brown Academy Forestry Lot	206	0.3
Parsonage Lot – Town Forest	206	0.3
NRCS WRP ¹ – WaTutCa	183	0.3

Natural Resources Conservation Service Wetlands Reserve Program

Source: NH Geodata Portal, Conservation Lands Layer

Agricultural Land & Soils

Roughly 13% (2,184 acres, 3.4 sq mi) of soils in Northwood are designated in the Rockingham Soil Survey as prime farmland, farmland of local importance, or farmland of statewide importance (Figure 11). Approximately 1,423 acres (2.2 sq mi) of land fall within the Town's Agricultural Soils Overlay District, which includes areas of prime farmland and farmland of statewide importance (Figure 12).

Land In Current Use

Current use taxation, enabled under NH RSA 79-A, encourages preservation of open space by assessing qualifying land at a lower rate. Approximately 495.1 acres of land (2.8% of the town's land area, 0.8 sq mi) on 30 parcels are in current use.¹² This includes 143 acres (0.2 sq mi) of farmland, 195 acres (0.3 sq mi) of undeveloped open space, 140 acres (0.2 sq mi) of wetlands, and other undeveloped land.



Figure 11. Acres of agricultural soils in Northwood (Source: NRCS Rockingham Soil Survey, obtained through NH Geodata Portal)

ZONING

General District

The general purpose of the Zoning Ordinance is to guide the character of growth, development and change in Northwood in order to provide for the public health, safety, and general welfare. The Town seeks to balance the process of growth, development and change with the need to preserve and enhance those qualities which make Northwood a safe and desirable place to live, work and visit. Northwood has one town-wide zoning district, the General District, and several overlay districts. The dimensional standards for the zoning district are shown in Table 3. The Town regulates density through residential density standards that vary according to the overlay districts (Table 4). Additionally, elderly housing is currently permitted at greater density than non-elderly housing but requires more frontage and greater setbacks.¹³

Dimensional Standards	Standard	Open Space Design Incentives
Minimum Road Frontage	150 feet	125 feet
Minimum Lot Size	2 acres	1.5 acres
Minimum Road Setback ¹	20 feet	20 feet
Minimum Side/Rear Setback	20 feet	20 feet
Waterbody/Wetland Setback	20 feet	20 feet
Maximum Structure Height	35 feet	35 feet
Multi-Family Residential Minimum Front Setback	50 feet	
Multi-Family Residential Minimum Side/Rear Setback	50 feet	
Minimum Scenic Road Setback	50 feet	

Table 3. Dimensional standards in the General District

¹ Large businesses have greater setback requirements. Source: Northwood Development Ordinance 2021

Table 4. Residential Density Standards

Residential Density	
General District	1 unit / 2 acres, maximum density formula applies
Elderly Housing ¹	4 per acre
Conservation Overlay District	1 unit / 4 acres, maximum density formula applies
Wellhead Protection Overlay District	1 unit / 4 acres, maximum density formula applies
Wetlands Conservation Overlay District	Not permitted
Agricultural Soils Overlay District	Open Space Design Required
Steep Slope Protection Overlay District	Special Exception Required 20-25% slopes; restrictions apply 25%+ slopes
Open Space Design	Maximum Density Open Space Formula

Source: Northwood Development Ordinance 2021

¹ The Planning Board is proposing a 2023 Warrant Article to change the density standard for elderly housing in response to land use statute changes pursuant to <u>HB 1661</u>.

A variety of residential, commercial, institutional, and industrial uses are permitted in the General District. The Development Ordinance contains three tiers of performance criteria that apply depending on the use. Criteria are evaluated through the site plan review process. The Ordinance permits mixing of multiple non-residential uses on a lot, a provision that tends to increase the viability of small and local businesses.

The Development Ordinance includes some opportunities to improve housing affordability. In addition to the density bonus for elderly housing, mixed uses are permitted. Mixed residential and non-residential uses may be approved through site plan review, however, with the exception of elderly housing developments,¹³ only one principal residential structure is permitted per lot. Home businesses are also allowed throughout town.

Overlay Districts

There are five overlay districts in Northwood: Steep Slopes Overlay District, Agricultural Soils Overlay District, Wetlands Conservation Overlay District, Conservation Area Overlay District, and Wellhead Protection Overlay District (Figure 12). These districts are applicable in designated areas of the community and add an additional layer of criteria and standards to that of the General District.

POPULATION & DEVELOPMENT TRENDS

Since 2000, Northwood's population increased from 3,640 to 4,641 residents (27.5%), a rate that is over twice that of Rockingham County (13.2%) and the state (11.5%).¹⁴ Similar to neighboring communities, the county, and the state, Northwood experienced a greater rate of growth the last 10 years than the previous decade (Figure 13).¹⁵ As of the 2020 Decennial Census, Northwood accounts for 1.5% of the population of Rockingham County.¹⁶

Northwood's population is getting older. From 2010 to 2020, the median age in Northwood increased from 40.8 to 44.5 years of age.¹⁷ The statewide median age is 43.0, while that of the nation is 38.6.¹⁸







Legend

Steep Slopes Overlay District	Wetlands Conservation Overlay District
Contiguous Area of Steep Slopes (over 2,000 acres)	Poorly drained soils
20% to 24.99%	Very poorly drained soils
25% or greater	Wetland Soils 20ft Buffer
Agricultural Soils Overlay District	Conservation Area Overlay District
All areas are prime farmland	Lake, Pond
Farmland of statewide importance	

Figure 12. Map of overlay districts. The Wellhead Protection Overlay District and the Wetlands Conservation Overlay District's 100ft buffer for prime wetlands are not shown in this map (Source: NH Geodata Portal, Town of Northwood Overlay Districts Map, Town of Northwood Zoning Ordinance) By 2020, Northwood had about 1,000 more residents than the town did in 2000. Since 1998, land identified as residential land has increased by approximately 650 acres, or 50%, according to digitized land use data. At the same time, land identified as either commercial or industrial – predominately located along Route 4 – declined by about 120 acres (41%) (Figure 14).¹⁹

Similar to many communities in New Hampshire, the community's median age has increased over the last decade. Currently, the median age of residents in Northwood is 44.5, slightly higher than the statewide median age of 43.0 vears of age.²⁰ In 2010, the population age 17 and younger accounted for nearly 20% of the town's population. while in 2020 this cohort was down to 12.6% of the total population.²¹ During the last decade, the percent of the population ages 65 and older nearly doubled, now representing about 28% of the town's population.²² The increase in residents and the increasing number of older residents, among other factors, have an impact on the demand for ageappropriate housing types.

The total estimated number of residential units, including both year-

round and seasonal dwellings, grew by 18% from 2000 to 2020 up to 2,244 units (Figure 15). A vast majority (73%) of housing units are single family units (Figure 16). Sixteen percent are mobile homes, boats, RVs, or vans. Only 7% of the housing stock consists of structures with 2-4 dwelling units and less than 4% have 5-19 dwelling units.²³

The vacancy rate dropped from 29% in 2010 to 18% in 2020.²⁴ Data from the American Community Survey shows that an estimated 87% of vacant units in 2020 were seasonal units.²⁵



Figure 15. Housing units in 2000, 2010, 2020 (Source: Decennial Census, 2000, 2010, 2020)



Figure 16. Total number of housing units (owner and renter occupied) by number of units in structure (Source: ACS 2020 5-Year Estimates, Table B25124)



Figure 14. Land use in 1998 and 2015(Source: NH Geodata Portal)

New Construction Permits

Between the years 2012 and 2022, a total of 144 permits for new single-family dwellings were issued by the Town of Northwood, peaking at 23 permits in 2016 then declining through 2021 (Figure 17).²⁶ As of October 6, 2022, 14 permits had been issued for single

family homes in 2022. Four new commercial structures have been issued permits. The number of permits issued for new manufactured homes during this period totaled 26 permits and averaged 2.4 permits per year.



Figure 17. New construction permits issued over the last 10 years (Source: Building Department, provided via email 10/6/22)

Planning Board Cases

Information on the type and number of applications submitted to the Planning Board between 2016 and 2022 YTD (10/6/22) is summarized in the map and accompanying chart in Figure 18. A total of 23 Site Plan Review and 15 Minor Site Plan Review applications, including amendments, were proposed. During this period, 17 major or minor subdivisions or subdivision amendments were proposed. Consistent with past development trends in Northwood, most nonresidential development, change of use, or amendments to existing plans in recent years has occurred along Route 4. Subdivisions have been more scattered, including lots on Ridge Road (2017), Harmony Road (2018), Old Mountain Road (2019, 2021), and Olde Canterbury Road (2021), among other locations.²⁷





Figure 18. Planning Board applications from 2016-2022 YTD (10/6/22) by general application type. The map displays parcels where development, subdivision, or lot mergers were proposed. The chart displays the number of each application type by year (Source: Town of Northwood Land Use Department, provided via email 10/6/22)

DEVELOPABLE LANDS (BUILD OUT)

A developable lands map was prepared to show areas within Northwood that are generally developable or not developable (Figure 19). The purpose of the analysis is to create a conceptual map that highlights areas that have existing development and development restrictions, and areas that are undeveloped (i.e. open space, forest, fields, residential lawns, etc.). This analysis does not incorporate local dimensional standards, such as minimum lot size or frontage, which impact whether a lot can be developed or further developed. It also does factor in information about whether existing development on a parcel precludes further development, i.e., a large lot with a home may appear mostly undeveloped but may not be further developable due to the presence of that home.

This analysis shows where additional development is restricted due to the presence of land that is already developed, land that is conserved, and/or land that includes steep slopes and wetlands and is therefore not suitable for development. These areas are depicted in dark gray in Figure 17, while the remaining areas that are potentially developable are shown in sage green. Through this analysis, roughly 50% of the land of Northwood is potentially developable. Most of the potentially developable land is forest land.

Additional regulations within the Conservation Area Overlay District, Agricultural Soils District, and Wellhead Protection Overlay District may further reduce development potential of a parcel. However, development is not prohibited within these areas and therefore they are shown in Figure 18, but not incorporated into the Developed, Conserved, or Protected Land area.

Additional Build Out Analysis

A more detailed, parcel-based build out analysis may be included in the Future Land Use Chapter. This will reveal information about the number of new residences that the land can support under existing or amended zoning regulations. This information is helpful in predicting the demand for municipal services such as schools, fire, and police. The analysis would also help identify the areas that are likely to undergo residential development, which can help the Town anticipate the need for improvements to municipal infrastructure such as roadways as well as priority conservation land.



Legend

- Developed, Conserved, or Protected Land
 - Potentially developable land (subject to land use regulations)
- Conservation Area Overlay District
- Agricultural Soils Overlay District
- Lake, Pond

Figure 19. Build-out map showing areas that are potentially developable (Source: NH Geodata Portal, 2015 Land Use Layer, 2022 Conservation Lands Layer, Rockingham County Soil Survey, Town of Northwood Overlay District Map, Town of Northwood Zoning Ordinance)

Developed, Conserved, or Protected land indicates areas that are not available for development including:

- + Land classified as 'Developed' within the 2015 Digitized Land Use Layer
- + Conservation Land identified in the 2022 NH Geodata Portal Conservation Lands Layer
- + Land within Northwood's Wetlands Conservation Overlay, identified as poorly drained and very poorly drained soils, as well as a 20 foot buffer around these areas. The 100 ft prime wetland buffer is not included.

+ Areas with slopes in excess of 20% and totaling more than 2,000 square feet of contiguous area.

The combined area of these features is approximately 9,368 acres (52% of the land area of the town).

Additional restrictions and standards apply in the Conservation Area Overlay District, Agricultural Soils Overlay District, and Wellhead Protection Overlay District. Further, dimensional standards and density standards also impact whether land can be developed or further developed.

² Merrill's 1817 Gazetteer of NH

⁴ Piscataqua Bridge, Frank Griggs, Jr., Structure Magazine, April 2013.

⁵ NH Fish & Game, Wildlife Action Plan 2015, updated in 2020.

⁶ The major watersheds (Hydrologic Code Unit (HUC) 4) in New Hampshire are the Merrimack, Connecticut, Saco, and Androscoggin.

7 2015 LU layer

⁸ NH Geodata Portal, 2015 Digitized Land Use layer

⁹ NH Geodata Portal, 2015 Digitized Land Use layer

¹⁰ NH Geodata Portal Conservation Lands

¹¹ NH Geodata Portal, Conservation Lands

¹² Northwood Parcel Report, provided by Land Use Department in August 2022.

¹³ The Planning Board is proposing a 2023 Warrant Article to change the density standard for elderly housing in response to land use statute changes pursuant to HB 1661. If passed, elderly housing would be subject to standards for cluster housing and allowed up to 2 units per lot.

¹⁴ US Census, 2000, 2010, 2020

¹⁵ US Census, 2000, 2010, 2020

¹⁶ US Census, 2000, 2010, 2020

¹⁷ American Community Survey (ACS) 2020 5-Year Estimates, ACS 2010 5-Year Estimates

¹⁸ ACS 2020 5-Year Estimates

¹⁹ NH Geodata Portal, 1998 and 2015 Digitized Land Use layers. These photo-interpreted land use data are intended for use by state, regional, and municipal resource managers, planning agencies, and other stakeholders. The primary source used to map the land use was high resolution (1-foot), true color aerial photography, collected in the spring of 2015. Data development was completed by Rockingham Planning Commission (27 communities) and Strafford Regional Planning Commission (18 communities), with GRANIT providing technical support, metadata development, and standardizing/merging of the datasets into a regional product.

 ²⁰ American Community Survey (ACS) 2020 5-Year Estimates, ACS 2010 5-Year Estimates
 ²¹ American Community Survey (ACS) 2020 5-Year Estimates, ACS 2010 5-Year Estimates
 ²² American Community Survey (ACS) 2020 5-Year Estimates, ACS 2010 5-Year Estimates

²³ American Community Survey (ACS) 2020 5 Year Estimates

²⁴ US Census, 2020

²⁵ American Community Survey (ACS) 2020 5-Year Estimates

²⁶ New construction building permit data for
2012-2022 provided via email by Carol Manter,
Building and Assessing Assistant, October 6,
2022.

²⁷ Planning Board case data for 2016-2022 provided via email by Linda Smith, Land Use Department, 10/6/22

¹ Merrill's 1817 Gazetteer of NH

³ 1870 US Census.