



View of Downtown from Nugget Arcade

Promoting Downtown Vibrancy

Our downtown will be a dynamic mix of locally beneficial businesses and cultural assets, a variety of housing types and mobility options, and ample public spaces available for community gathering.

GOALS:

- 7-1. A diverse commercial base will be fostered.
- 7-2. More dwellings will be built in and around the greater downtown.
- 7-3. Business owners will be supported enabling their ventures to grow and prosper.
- 7-4. Public gathering spaces in the downtown will be enhanced.
- 7-5. Universally-accessible, people-centered means of transportation will be fostered in, around, to, from and through the downtown.
- 7-6. Arts and culture will be appreciated every day.
- 7-7 Using the highest standards for sustainable urban design, improvements will be implemented in the greater downtown.

Introduction

Hanover's downtown is the heart of the community where residents, shoppers, college students and their families, alumni, sports camp attendees, Appalachian Trail hikers, and other visitors all cross paths. The town has worked hard to establish its downtown as its heart and soul with a mix of housing units, eateries, and offices, as well as the High School, Post Office, and a variety of performing and visual arts venues.

For decades, town planning has sought to keep the downtown as the community's economic, social, and cultural hub. Residential development is dispersed throughout the town's landscape, though business and institutional growth has been kept to the area served by municipal water and sewer. Challenged by the shift to online purchasing, the presence of big box stores, and the Covid-19 pandemic that began in early 2020, business owners and planners have paused to re-consider what makes the downtown tick and how to keep the downtown vibrant – full of life and creating its own energy.

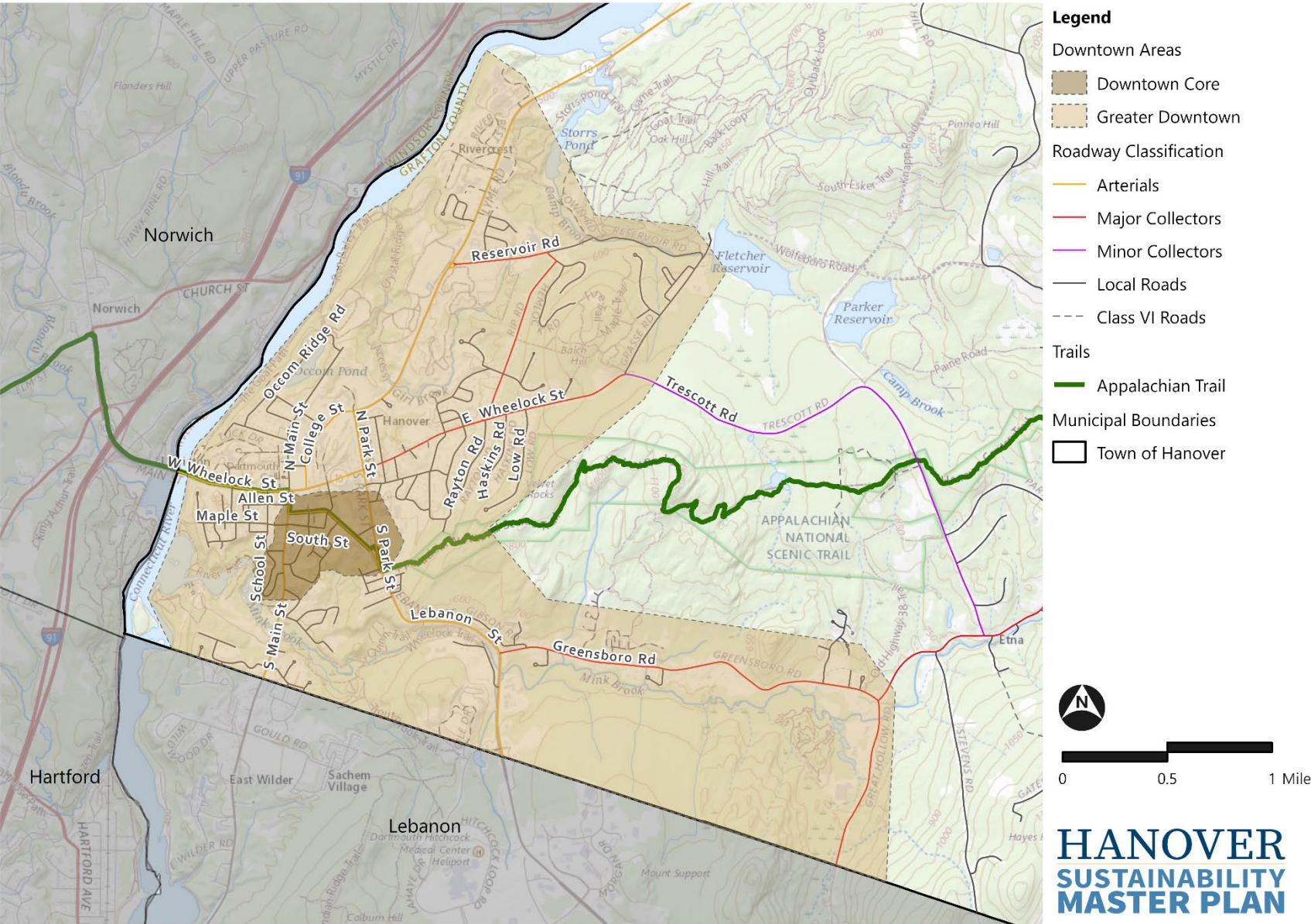
In 2000, the town conducted a Downtown Vision study that has served as the guiding document for planning, design, and transportation improvements. This chapter builds on that study, highlighting the existing assets and design elements found in the fabric of downtown that contribute to a high-quality experience for its residents, visitors, and business owners. With a focus on balancing what is best of existing assets with what is needed to promote downtown vibrancy, the goals and strategies outlined in this chapter aim to reinforce the community's vision for enhanced livability through planning and investments in downtown amenities, open space, mobility improvements, and commercial viability.

Greater Downtown and Downtown Core

Hanover's greater downtown is generally defined as the southwestern corner of the town and includes the areas served by both water and sewer (see [Figure 7-1](#)). Zoning has reinforced downtown residential neighborhoods, which are easily distinguished from the downtown core where commerce is the primary activity.

Dartmouth College's campus-much larger in scale than the commercial core- serves as an integrated, well-defined "neighborhood" just north of the retail business district, the downtown core. It is surrounded by residential areas that may not be considered "downtown" because of the lack of businesses, but are most definitely part of the greater downtown, walkable to the retail business district. Main Street connects the College with the commercial core. A second commercial node between the two roundabouts on Route 10 offers a smaller mix of retail and service establishments. Distinctive visual cues announce gateways to Hanover's downtown. Three occur at bridge crossings: at the Ledyard Bridge, crossing Mink Brook on Route 120 and South Main Street; and one at the northern-most roundabout on Route 10.

Figure 7-1: Hanover’s Downtown Areas



Source: Town of Hanover, CAI Technologies - AxisGIS

Goal 7-1. A diverse commercial base will be fostered.

A vibrant downtown offers something for everyone.

A variety in uses and business types adds interest to a downtown and attracts a broad clientele. To be distinctive, Hanover should optimally be home to predominantly locally-owned businesses with a sprinkling of nationally recognized establishments. In order to appeal to this type of market for commercial space, the town's Zoning Ordinance must remain flexible in allowable uses and with parking minimums.

Observations about the downtown core include the lack of a variety of uses. While the Nugget Theater, Dartmouth College, and a few restaurants offer entertainment options, integrating regular music and events into the downtown core has been suggested. Also, the shift from retail to service establishments has left many residents needing to leave town to purchase essentials, such as shoelaces and hardware.

The downtown commercial base has a few production businesses, such as Brigadeiro, Dirt Cowboy, Designer Gold, Red Kite, Umpleby's, and Lou's Bakery. Other communities have different types of artisan manufacturing with outlets in the form of kombucha bar, brewpub, distillery, pottery studio or soft goods such as clothing, luggage, or handbags. These types of businesses create a unique profile for the downtown, adding interest and variety to the commercial mix.

The town should audit and provide the public with an inventory of Americans with Disability Act (ADA)-compliant establishments and restrooms. This will serve to ensure that everyone feels accommodated.

Goal 7-1: Supporting Strategies

- ▶ **Strategy 7-1.1.** Review zoning restrictions that limit the growth, density, and type of commercial development in the downtown, including regulations around the mix and flexibility of allowable uses and parking minimums.
- ▶ **Strategy 7-1.2.** Establish design guidelines so that formula businesses (chain stores and restaurants) have a slightly different look that helps maintain the character of the downtown.
- ▶ **Strategy 7-1.3.** Audit and inventory ADA-compliant establishments and restrooms.
- ▶ **Strategy 7-1.4.** Promote small-scale manufacturing, artisans and night life within the downtown.

Goal 7-1: Performance Metrics

- ▶ Review of Hanover Zoning Ordinance especially for flexibility in allowable uses and parking minimums
- ▶ Adoption of design guidelines so formula businesses visually complement downtown
- ▶ Audit of ADA-compliant establishments and restrooms
- ▶ Inventory of ADA-compliant establishments and restrooms made publicly available
- ▶ Number of new small-scale manufacturing and artisan establishments

Goal 7-2. More dwellings will be built in and around the greater downtown.

A vibrant downtown teems with people: walking, biking, eating, window shopping, greeting friends, people watching, dog walking, etc.

Rather than having to promote the downtown to lure people to the area, a resident population within walking, transit, or easy biking distance creates a ready market for the goods and services and an audience for cultural events. With municipal services, well maintained sidewalks, transit services, and easy interstate access, the southwest corner of Hanover is an excellent location for more housing.

Strategies to accomplish more housing in the greater downtown start with zoning modifications to enable more housing units per acre, whether by allowing additions to existing structures, the creation of more units within existing structures, or the removal of regulatory barriers to more residential density (e.g., parking minimums). Prioritizing infill and rehabilitations (not tear downs) should guide where and how properties are changed to accommodate more homes.

As featured in its 2020 *Planning for Possibilities*, Dartmouth College's 30-year strategic framework, the College has plans to provide more housing with 1,150 undergraduate beds and 680 units designated for graduate students, faculty and staff, that are within walking distance to the campus. To assure the availability of housing to people not affiliated with Dartmouth is made available, the town must continue its leadership in finding sites and making sure that attainably priced housing is created in the greater downtown.

To provide vibrancy to the downtown, mixed-use buildings should be permitted. Examples of such spaces combine commercial first floor space with a story or two of residential space. These units would add to the street life of downtown, provide start up space for small business, and bring more people to the downtown to patronize those businesses.

Scaling density from the downtown core to the outermost neighborhoods of the greater downtown makes density increases seem more organic and will accomplish the goal of enabling more people to live in a walkable or transit-served neighborhood.

More people proximate to the greater downtown would allow for travel modes that result in less vehicle miles traveled, and better health for people and the environment. More people also make for a more vibrant downtown both in the day and in the evening.

Goal 7-2: Supporting Strategies¹



- **Strategy 7-2.1.** Free up potential residential development space by revising parking minimums and incentivizing shared parking.



- **Strategy 7-2.2.** Support Dartmouth College's development of on-campus housing to ensure an adequate and affordable housing supply for graduate and undergraduate students, faculty, and staff.



- **Strategy 7-2.3.** Incentivize the creation of more attainable housing within walking distance of the downtown core.



- **Strategy 7-2.4.** Modify the Zoning Ordinance to clarify and allow flexibility in residential use in the downtown.

¹ Strategies accompanied by an icon are those that enable greenhouse gas emissions reduction.



- ▶ **Strategy 7-2.5.** Create a gradual transition of decreasing density from the downtown core to the periphery of the greater downtown.



- ▶ **Strategy 7-2.6.** Increase the allowable residential density in the greater downtown.

Goal 7-2: Performance Metrics

- ▶ Number of new residential units created in the greater downtown
- ▶ Median price of housing in the greater downtown
- ▶ Number of non-student and student residents in the greater downtown
- ▶ Number of live-work units in the greater downtown
- ▶ Increase in permitted residential density within a 20-minute walk of the downtown core

Goal 7-3. Business owners will be supported enabling their ventures to grow and prosper.

A vibrant downtown hosts thriving businesses that generate activity and create a reason for people to be in the area.

Goods, services, and jobs are the reasons most people find their way on a regular basis to downtown Hanover. Every empty storefront takes wind out of the sails of the local economy and represents both lost opportunity and loss of potential synergy created by the concentration of businesses. For this reason, the town has a stake in the success of its businesses.

Over the years, as more goods and services are available to students via on-campus venues and online vendors, there is less student activity downtown. The simple change in the Dartmouth academic calendar so that students are no longer on campus between Thanksgiving and New Year's Day results in a huge loss to downtown merchants. Dartmouth representatives must take seriously the role the College plays in the success of the commercial core and have an obligation to work with the town to craft a reasonable role in assuring that success. For example, the Collis Market Student Convenience Store diverts foot traffic from Main Street businesses. Allowing the student DASH Discretionary Account to be accepted at Hanover's shops would not only bring more students downtown but would also directly support those establishments.

A Downtown Working Group has been created to identify and address local business concerns. The Working Group's efforts complement those of the Upper Valley Business Alliance, which provides outreach and marketing for both Hanover and Lebanon businesses. The Group's meetings with representatives of the town administration and Dartmouth College are designed to support businesses from within, addressing very specific issues. A branding campaign could incorporate what makes a visit to Hanover worthwhile and special, assisting both our businesses and customers. There are many opportunities for coordinating cultural programming to showcase the downtown and its businesses. These should be regular, well-planned, and publicized. With all of the ideas for aiding businesses, a void exists in terms of responsibility for implementation. An independent entity should be considered to move forward with this work.

Goal 7-3: Supporting Strategies

- ▶ **Strategy 7-3.1.** Coordinate with Dartmouth College to ensure goods and services provided on campus complement, and do not have the potential to supplant, businesses in the downtown.
- ▶ **Strategy 7-3.2.** Work with Dartmouth College to allow students' DASH Discretionary Account to be accepted at Hanover restaurants and other establishments.
- ▶ **Strategy 7-3.3.** Coordinate with Dartmouth College and the Upper Valley Business Alliance to find opportunities for the organization to better support Hanover business owners in the downtown.
- ▶ **Strategy 7-3.4.** Develop a branding campaign that highlights the uniqueness of the businesses in the downtown, as well as the Town's history and attractions, including the Appalachian Trail.
- ▶ **Strategy 7-3.5.** Partner with local businesses to plan additional cultural programming, including community-wide festivals and arts/music events. Such events should be conducted regularly (e.g., monthly, annually), as feasible, and should reflect the uniqueness of the community and its residents.
- ▶ **Strategy 7-3.6.** Regularly convene current and potential business owners to hear and address their concerns.
- ▶ **Strategy 7-3.7.** Review the Zoning Ordinance and modify it to more creatively accommodate business uses in the downtown.

- ▶ **Strategy 7-3.8.** Attract a new anchor store to locate south of Lebanon Street to draw pedestrians to and generate more activity in that part of the downtown core.
- ▶ **Strategy 7-3.9.** Connect organizations that offer business consulting programs with interested business owners.
- ▶ **Strategy 7-3.10.** Explore options for hiring a person to implement initiatives to support downtown businesses.

Goal 7-3: Performance Metrics

- ▶ Creation of downtown core vibrancy business plan coordinated with Dartmouth College
- ▶ Number of events and programs held in the downtown in partnership with the business community
- ▶ Initiatives generated by the Downtown Hanover Working Group that are implemented
- ▶ Review of the Zoning Ordinance to more creatively accommodate business uses

Goal 7-4. Public gathering spaces in the downtown will be enhanced.

A vibrant downtown has places where people are drawn to gather.

A variety of public gathering spaces exist. Examples in Hanover's downtown include those that are:

- ▶ Designed, such as the seating wall in front of the Nuggett Arcade, or occasional, such as our street benches.

- ▶ Active, such as the multi-use path along Route 10, or passive, such as the Anne Frey garden on West Wheelock Street.
- ▶ Informal, such as a street corner at the intersection of streets, or formal, such as the Dartmouth Green.
- ▶ Privately owned, such as Nathan’s Garden on Maple Street, or publicly owned, such as the Sustainability Park on School Street.
- ▶ In an urban setting, such as around College’s Black Family Visual Arts Center, or in a residential setting, such as Dagmar’s Place.
- ▶ Temporary, such as the Hanover Country Club, or more permanent, such as Tenney Park at Thompson Terrace.

People feel welcome when they feel comfortable.

Additional public gathering spaces that are visible to the public should be explored, such as along Allen Street, in front of Town Hall, and in the area between Ledyard and Citizen banks on South Main Street. It may be that some parking spaces could be eliminated in order to accommodate small pocket parks with some greenery and seating. The greater downtown neighborhoods should all have a public gathering space within a five-to-ten-minute walk of each residence where people of all ages and abilities feel welcome. Public school grounds offer informal gathering opportunities after school hours.

The sidewalk is where many people gather and interact. A streetscape plan detailing materials, lighting, street furniture, plantings, bicycle and micro-mobility accommodations (e.g., shelters and charging stations), and other “creature comforts” is needed to direct future investments in the commercial core and greater downtown area. The key is that these public spaces are universally accessible. A wayfinding system to guide people to these special places is needed.

Trees are critical not only for comfort in moderating temperature in the summer and as a windbreak but also for absorbing carbon dioxide and in improving mental attitude. The town has been a Tree City USA for over 43 years. This means a commitment of at least \$2 per person being spent on urban forestry – tree planting and care. Our older residential neighborhoods have amazing trees; our commercial core and primary entry ways to downtown have more formal tree lawns and decorative sidewalk tree grates. Where there are no trees, our wooded hillsides offer a sense of enclosure and reinforce the feeling that Hanover is close to nature.



Sidewalk Art at the RWB Community Center.

A focal point, such as a kiosk highlighting Hanover history or an art installation, brings people to a gathering place and enriches the experience of being there.

Goal 7-4: Supporting Strategies

- ▶ **Strategy 7-4.1.** Identify opportunities to create additional public gathering spaces in the downtown, including requiring accessible public spaces in new developments and major renovations.
- ▶ **Strategy 7-4.2.** Implement a streetscape plan and fund its recommendations.
- ▶ **Strategy 7-4.3.** Increase the tree canopy in the downtown, through additional street trees and by requiring plantings within new developments and major renovations.
- ▶ **Strategy 7-4.4.** Engage the community, including students at Dartmouth College and the Hanover High School, to implement creative placemaking in the downtown, including for example, art murals, street performances, and walking tours.
- ▶ **Strategy 7-4.5.** Consider implementing a series of kiosks at public gathering spaces to celebrate Hanover's history, and communities of various ethnic and cultural backgrounds, including native persons.



Goal 7-4: Performance Metrics

- ▶ Assessment of downtown residential areas with no public gathering space within a five- to ten-minute walk
- ▶ New public gathering spaces in the downtown created

- ▶ Streetscape Plan
- ▶ Annual Tree City USA recognition
- ▶ Number of public art installations and other creative programming in the downtown
- ▶ Number of cultural kiosks installed

Goal 7-5. Universally-accessible, people-centered means of transportation will be fostered in, around, to, from and through the downtown.

A vibrant downtown is easy to get to and once there, easy to get around.

For a town of its size, Hanover is well connected. It is only minutes from Interstates 89 and 91 and only 65 miles to Concord, 96 miles to Burlington, Vermont and 125 miles to Boston, Massachusetts. There is bus service from downtown to Boston South Station, Logan International Airport, New York City, and Burlington, Vermont. The Lebanon Municipal Airport is located about 6 miles from the downtown and the Amtrak station in White River Junction is about 4 miles away.

Public transit provides a valuable, sustainable, and equitable transportation alternative to automobile use. This benefits the downtown by reducing motor vehicle congestion and parking demand and improving air quality. People can hop on a bus and ride for free along fixed bus routes from downtown to Lebanon, West Lebanon, Norwich, and Hartford, or take a shuttle to and from Dartmouth Hitchcock Medical Center and Dartmouth College. Bus stops within the greater downtown are designated along main roads. Advance Transit provides real time bus locations via mobile app so riders can plan when to meet the buses rather than waiting for long periods at the bus stops.



Bicyclists at the Dartmouth Campus. Credit: Yolanda Baumgartner

Shared mobility in the form of vanpools, or app driven ride-hailing or ride-sourcing using services such as Uber and Lyft, have a growing place in the transportation system. One advantage of these services for the downtown is that their passengers do not require parking. Other shared mobility opportunities such as shared e-bikes should be available. The town can designate areas for pickup and drop-off and corrals for e-bike and e-scooter rentals. Charging and covered storage for micro-mobility devices not only enhances convenience for users but also promotes the use of these alternate forms of getting around.

With some careful design, Hanover's major gateways on Route 10 north and south of town, on Route 120 and on West Wheelock Street could provide more welcoming entrances to the downtown. To reduce traffic in the downtown and dependency on parking, shuttle lots should be established on each of the major roadways leading into the town with regular and convenient shuttle service to many points downtown.

The roadway network in the downtown is well established and there is general agreement within the community that roadways should not be expanded to add capacity, rather, alternative modes should be promoted to reduce reliance on automobiles, and technology should be leveraged to make the existing system more efficient. In the course of routine maintenance, upgrading the roads in town to be complete streets should be planned.

Parking plays an important role in downtown vibrancy. In Hanover, parking carries negative perceptions: first, that there are no parking spaces available; and second, that once parked, a visitor is sure to get ticketed. These perceptions must be addressed with better wayfinding to parking lots, a real time parking locator application, and clear instructions about how to pay for parking. People who drive to the downtown core as a destination require parking, but parking spaces take up valuable space within the downtown. The recommendations in Hanover's 2019 *Downtown Parking Plan Update* focused on optimizing the utilization, pricing, and enforcement of the public parking supply in Hanover's downtown. The plan proposed specific short-, mid- and long-term parking management strategies to address current and future parking demand. Most of the parking management solutions are aimed at maximizing utilization of the parking spaces that already exist. Some solutions, like improving the quality of pedestrian connections to outlying parking lots, would not require adding spaces. However, the plan does predict a long-term shortage of downtown parking and it identified structured parking as the solution. The recommendations of

the plan support a vibrant downtown. Review of the parking standards in the Zoning Ordinance should occur. An update of this plan should include consideration of parking for service vehicles, employees, and new residents who will occupy new downtown housing, as well as how pedestrians can more safely navigate through parking lots.

The demand for high-speed EV charging for regular visitors and the traveling public is increasing. For the convenience of both, a system of charging stations should be planned and installed in a number of downtown locations.

Designing the downtown to be pedestrian and bicyclist friendly is the aim of Hanover' Bike Walk Committee. The 2022 Bike Walk Plan details improvements that should be made to improve pedestrian and bicyclist accessibility and safety. In some cases, our sidewalks are not wide enough to accommodate the pedestrian demand, as well as suitable space for street furniture, trees, lights, store displays, or other amenities. Sidewalks should also be Americans with Disabilities Act (ADA) compliant, and crosswalks should be placed along desired lines and treated uniformly so they are identifiable to motorists and pedestrians alike. The sidewalk space should also be aesthetically welcoming and a comfortable space for people to spend their time, in a sense the most basic public gathering space. Enlivening alleys and parking lots with landscaping that integrates low impact design stormwater management treatment areas will green up those places.

Regular and frequent bicycle use is promoted and encouraged in Hanover's greater downtown. While there are some bike lanes or striped shoulders along several major roads, these amenities disappear deeper into the residential areas and in the commercial core to provide space for on-street parking. Travel speeds within the downtown are posted at 25 mph, which helps offset the loss of shoulders and bike lanes. Bike routes should be better signed and protected to alert

motorists, help bicyclists navigate and encourage students and less bold cyclists to bike rather than drive. While there may be tradeoffs in the form of lost parking or narrowed or eliminated travel lanes, the benefits include increased and potentially safer bicycle use, less dependence on motor vehicles, and lowered parking demand. The resulting shift toward active transportation adds to the vibrancy of the downtown.

Goal 7-5: Supporting Strategies



- **Strategy 7-5.1.** Conveniently locate the multi-modal hub so bus service to downtown continues.



- **Strategy 7-5.2.** Promote enhanced transit with service every day to more locations for more hours of the day.



- **Strategy 7.5.3.** Improve infrastructure for transit users.



- **Strategy 7-5.4.** Establish shared mobility services accommodating charging and covered storage.

- **Strategy 7-5.5.** Enhance each of the four downtown gateways.






- **Strategy 7-5.6.** Establish an off-site shuttle lot along each of Hanover's four gateway roads.



- **Strategy 7-5.7.** Improve bicycling and walking conditions in the downtown by implementing a complete streets approach with multimodal accommodations.



- **Strategy 7-5.8.** Improve walking conditions by addressing accessibility deficiencies and by systematically implementing the recommendations of the Town's *Pedestrian Crossing Treatment Guidelines*.

- ▶ **Strategy 7-5.9.** Establish safe bicycling connections through intersections along each of Hanover’s four gateway roads.
- ▶ **Strategy 7-5.10.** Manage parking in the downtown according to the recommendations of the Town’s 2019 *Downtown Parking Study*.
- ▶ **Strategy 7-5.11.** Update the 2019 *Downtown Parking Study* to consider parking for service vehicles, employees, and new residents who will occupy downtown housing, and pedestrian ways through parking lots.
- ▶ **Strategy 7-5.12.** Provide signage and information to make the parking system easy to use and understand, including publicizing that parking is free after 5:00 PM.
-  ▶ **Strategy 7-5.13.** Create a wayfinding plan for the downtown, with coordinated systems and design that highlight major destinations, public gathering spaces, historical and cultural features, dining, retail, parking, walking, biking, and transit systems.
-  ▶ **Strategy 7-5.14.** Install high-speed EV charging stations in a number of downtown locations.
-  ▶ **Strategy 7-5.15.** Partner with Dartmouth College to apply for federal grants for high-speed EV charging stations.

Goal 7-5: Performance Metrics

- ▶ Plans for gateway enhancement
- ▶ Establishment of off-site shuttle lots
- ▶ Linear feet of streets in the downtown incorporating complete streets principles

- ▶ Number of recommendations implemented from the Town’s Pedestrian Crossing Treatment Guidelines
- ▶ Number of recommendations implemented from the Town’s 2019 *Downtown Parking Study* and any updates of the study.
- ▶ Update of 2019 *Downtown Parking Study*
- ▶ Wayfinding Plan developed
- ▶ Number of high-speed EV charging stations installed

Goal 7-6. Arts and culture will be appreciated every day.

A vibrant downtown celebrates the arts and its history.

One of Dartmouth College’s gifts to Hanover’s downtown is its Arts District with the Hood Museum, Hopkins Center for the Arts, and Black Family Visual Arts Center. With town roads running through the campus, Dartmouth’s public art is on display in many locations. The High School Art Club’s mural at the town’s RW Black Center celebrates the Appalachian Trail and brightens up the walkway and parking lot. Pairing cultural events with special menus at local restaurants brings attention to the event and clients into the restaurants.

Hanover is an Appalachian Trail Community, one of 10 towns whose Main Streets coincide with this National Scenic Trail. Part of Hanover’s identity is the Appalachian Trail running through its downtown. Seeing Appalachian Trail hikers traveling up West Wheelock Street or opening packages outside the Post Office is a sure sign of summer. Though commemorated by a plaque in front of the Hanover Inn, this aspect of Hanover should be more visibly promoted and could be used as an attraction and reason to visit Hanover.



View of Lebanon Street. Credit: Jonathan Edwards

The Daniel Webster Cottage on North Main Street is one place to learn about the history of Hanover, but more could be done to bring the town's pre-colonial and more recent history to life.

While the downtown's commercial core reinforces Hanover's sense of community, there are many unexplored opportunities to promote the arts and local culture.

Goal 7-6: Supporting Strategies

- **Strategy 7-6.1.** Coordinate cultural events with special sales and/or menus.

- **Strategy 7-6.2.** Develop a plan to enhance the visibility of the Appalachian Trail.
- **Strategy 7-6.3.** Devise a system of kiosks to explore Hanover's history and architecture and share information about Hanover.

Goal 7-6 Performance Metrics

- Number of paired commercial and cultural events
- Appalachian Trail celebration and appreciation day
- Number of kiosks installed

Goal 7-7. Using the highest standards for sustainable urban design, improvements will be implemented in the greater downtown.

A vibrant downtown is a functional place for commerce and services, but is also a comfortable place for people.

There is no time better than the present to work the ideas for a sustainable community into the greater downtown. Maintaining the scale and visual character are key, when enabling additions to existing structures, including increased height. Sidewalk width and intersection improvements are already being studied and designed. With the new emphasis on mixed use and greater density, buildings within the downtown may be diverse in function but should be compatible with their neighbors in size and in disposition on their lots. The older structures should be retrofitted to the extent practicable to meet the standards we need for a sustainable future. That said, as needs evolve, so must land use and the structures to accommodate those uses.

 Energy performance standards must be the basis for designs in order to meet the 2017 Ready for 100 Pledge (See [Chapter 8, Addressing Climate Change](#)). This extends to exterior lighting as well as signage. Smart grid technologies, including the installation of advanced metering, would allow utilities and customers to better understand energy demand and take action to manage that demand.

A district energy system would tie a group of buildings to a central plant through a series of underground pipes to pump steam, hot water, and/or chilled water. Microgrids connecting downtown buildings could be established to deliver energy in the event of a grid outage. Any such system should integrate renewable energy sources to the greatest extent practicable.

Rather than piping stormwater away to ultimately join the Connecticut River, stormwater can be managed to keep it where it lands, infiltrating into rain gardens or pervious pavement. Rainwater can be collected and reused for non-potable purposes. Complete streets are already envisioned to accommodate pedestrians and bicyclists of all ages and abilities but should also be designed to manage stormwater and snow storage.

Sharing privately-owned resources such as parking amongst downtown property owners should be explored to accommodate parking without losing more space to motorized vehicles.

As the climate changes, buildings must be designed to handle hazards like high winds and icing, and to plan for back-up power in the event of outages.

Our built environment is a matter of pride. Its function should be sustainable. Building form should continue to enable views to Hanover's forested hillsides in order to maintain Hanover's sense of place.

Goal 7-7: Supporting Strategies

- ▶ **Strategy 7-7.1:** Enact energy performance standards for new construction and major renovations in the downtown.
- ▶ **Strategy 7-7.2:** Retrofit all remaining energy inefficient lighting and signage within the public right of way in the downtown to dynamic LEDs. Couple lighting retrofits or replacements with solar capabilities.
- ▶ **Strategy 7-7.3:** Work with local electric utilities on opportunities to integrate smart grid technologies within Hanover.



- ▶ **Strategy 7-7.4:** Explore opportunities in district energy for the downtown, in collaboration with Dartmouth College.
- ▶ **Strategy 7-7.5:** Plan for microgrids, which would connect buildings in the downtown together to deliver energy in the event of grid outage.
- ▶ **Strategy 7-7.6:** Encourage the retrofitting of properties within the downtown to reduce stormwater run-off, including through the installation of rooftop gardens and permeable pavements.
- ▶ **Strategy 7-7.7:** Explore opportunities for rainwater harvesting, where groups of buildings and public spaces would be retrofitted to collect and reuse rainwater.
- ▶ **Strategy 7-7.8:** Identify opportunities for shared resources among downtown property owners. For example, public and employee parking.
- ▶ **Strategy 7-7.9:** Update local codes and ordinances impacting the downtown to lessen the potential for physical damage from climate hazards (e.g., high winds) and enabling longer operating times in instances of disaster (e.g., back-up power).

- ▶ Impervious area to pervious area ratio
- ▶ Number of shared resource initiatives
- ▶ Resilience-oriented code and ordinance updates

Goal 7-7: Performance Metrics:

- ▶ Energy performance standards
- ▶ Grid electricity consumed in public right of way lighting and signage
- ▶ Smart grid IT integration
- ▶ Number of buildings connected to a district energy system
- ▶ Microgrids installation

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