



TECHNICAL MEMORANDUM #3: ZONING CODE

To: Town of Concord
From: Nelson\Nygaard
Date: March 20, 2013
Subject: Review of Parking Standards in Concord Zoning Code

OVERVIEW

The Town of Concord's Zoning Bylaw (amended April 2011) outlines the zoning code for the Town under the auspice of several objectives, including lessening congestion on the streets, conserving health, facilitating adequate provision of transportation, and more¹. The parking-related Bylaw code covers the entire Town of Concord, with no specific requirements for downtown overlay districts. The Zoning Bylaw covers many topics in great detail, but this memo focuses solely on the parking provisions.

This analysis is important to undertake as initial findings in the Town's Comprehensive Parking Study indicate that both Concord Center and West Concord have adequate parking supply for current levels of demand and land uses. In addition, the Shared Parking Memorandum found that national ITE parking rates are lower than the amount of parking that Concord has today. For these reasons, the project team undertook a comprehensive analysis of the Zoning Bylaw as it relates to parking.

This memo highlights parking regulations in Concord and compares them to national standards and best practices. This memorandum includes:

- Parking Provision
 - Review of Concord's zoning requirements compared to ITE
 - Shared parking
 - Change of use exemptions
 - In-Lieu fees
- Parking Design
 - Dimensional requirements
 - Curb cuts
- Related Measures
 - Car sharing
 - Unbundling parking
 - Bicycle parking

¹ Town of Concord, *Zoning Bylaw*, (April 2011): 1.2 Purpose.

- TDM measures

KEY FINDINGS

- Most of Concord's required parking minimums are higher than national suburban standards typically indicate
- Flexibility is built into the code via special permits, which offer room for interpretation, analysis, and exemptions
- Concord does have a shared parking provision but it has limitations for the number of spaces that can be shared and the types of uses that can share parking
- Design requirements, including dimensional requirements and curb cuts, offer standards that can help create more walkable streets
- Zoning does not include bicycle parking requirements

PARKING PROVISION

General Parking Requirements

In our review of the most up-to-date Zoning Bylaw (April 2011), it appears that in most cases Concord's general parking requirements are higher than the peak parking demand rates found in ***Parking Generation 4th Edition*** (Institute of Transportation Engineers, 2010), as illustrated in Figure 1. The peak parking demand rates found in the ITE guide are primarily derived from studies conducted in pure auto-dependent suburban sprawl settings. These rates are generally considered to be very conservative. When applied as minimum requirements in a more dense village setting –such as the current study areas - these tend to reproduce a similar auto-dependent suburban sprawl pattern that is incongruous with Concord's historical development. The current parking requirements generally exceed the ITE rates for most of the described land use, though not all, as some of Concord's requirements are in-line with or even below the ITE rates.

Figure 1 General Parking Requirements under Concord's Zoning Bylaw

Principal Use	Concord Regulation	ITE Peak Parking Demand Rates	Concord vs. ITE
One Family residential	2 spaces per dwelling unit.	1.83 spaces per dwelling unit.	Above
	1.5 spaces per dwelling unit for low and moderate income housing or elderly housing developments.	.59 space per dwelling unit for senior adult housing.	
Two Family residential	2 spaces per dwelling unit.	Rental townhouse: 1.62 spaces per dwelling unit	Above
	1.5 spaces per dwelling unit for low and moderate income housing or elderly housing developments.	.59 space per dwelling unit for senior adult housing.	

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Principal Use	Concord Regulation	ITE Peak Parking Demand Rates	Concord vs. ITE
Hotel and motel	1 space per rentable room, plus 1 space per two employees on the largest shift, plus 1 space per 4 persons to maximum rated capacity of each meeting or banquet room, plus 50% of the spaces otherwise required for accessory uses.	1.2 vehicles per occupied room at a hotel with accessory uses. .66 vehicles per occupied room at a business hotel. .71 vehicles per occupied room at a motel.	Above
Schools	1 space per staff member, plus 1 space per classroom (elementary and middle schools) 1 space staff member plus 1 space per 5 students at a (high school)	.17 spaces per student at elementary. .09 vehicles per student at middle school. .23 spaces per student at high school (suburban).	Above and Below – depending on type of school.
Hospital	1 space per 2 bed, plus 3 spaces per staff doctor, plus 1 space per other employees on the largest shift.	4.49 vehicles per bed, plus .81 vehicles per employee.	Below
Nursing Home	1 space per 2 beds.	.35 spaces per bed.	Above
Retail Store or personal service shop	1 space per 250 square feet gross floor area.	1.2 to 4 spaces per 1,000 square feet (depending on type).	Above
Restaurant	1 space per 3 seats rated capacity, plus 1 space per employee on the largest shift.	.49 spaces per seat at quality restaurants. .48 spaces per seat at high-turnover (sit-down) restaurants. .52 spaces per seat at a fast-foot restaurant with drive-through window.	Above and Below - depending on type of restaurant and the number of employees.
Commercial/office	General, administrative and executive offices: 1 space per 300 square feet of gross floor area. Professional offices: 1 space per 250 square feet of gross floor area.	2.84 spaces per 1,000 square feet.	Above
Bank	1 space per 250 square feet of gross floor area, plus 2 spaces per ATM.	4 spaces per 1,000 square feet.	Above (with ATM) Same (without ATM)

Principal Use	Concord Regulation	ITE Peak Parking Demand Rates	Concord vs. ITE
Warehouse and storage yard	1 space per 1,000 square feet of gross floor area plus 1 space per company vehicle kept on premises.	.51 spaces per 1,000 square feet.	Above
R&D and Light manufacturing	1 space per 300 square feet for office and 1 space per 400 square feet for research, testing, training, or light manufacturing.	0.75 spaces per 1,000 square feet.	Above
Manufacturing, packaging, processing, and testing	1 space per 400 square feet.	1.02 spaces per 1,000 square feet.	Above

Concord zoning also has a Special Permit clause, which are granted by the Board or the Planning Board, for designated uses on a case by case basis. Special permit determinations include traffic flow and safety concerns, including parking and loading.

Parking Minimums and Maximums

Most minimum parking requirements take into account only two variables, land use and the size of development. As with the requirements shown in Figure 1, these are typically expressed in terms of number of spaces required per a certain square footage of a particular land use; or per residential unit; or (for restaurants and stadiums) number of seats. In reality, however, parking demand is affected by many more variables, such as the geographic context, demographic characteristics of the community, availability of transit or other alternatives to the car, traffic demand management programs, vehicle ownership rates, housing unit size, share of affordable housing units, etc.

As currently configured, the Concord Zoning Bylaw establishes minimum parking requirements for a variety of land uses but does not provide a cap or limit on the maximum number of spaces.

In contrast to minimum parking requirements, parking maximums restrict the total number of spaces that can be constructed. Reasons for setting maximum requirements may include a desire to restrict traffic from new development, promote alternatives to the private automobile, or limit the amount of land that is devoted to parking. Parking maximums can be introduced in any place where there are or could be measures in place to combat overspill. While the policy is most likely to be appropriate in transit corridors, downtown, and areas with high levels of traffic congestion, it can be useful in any district that wants to limit traffic or the amount of land devoted to parking.

Figure 2 Parking Minimum and Maximum Requirements under Concord’s Zoning Bylaw

Existing Regulation	Best Practices
Parking Minimums	Reduced Parking Minimums: In a number of municipalities, parking minimum requirements can be reduced when certain conditions are met, such as central business districts, or with a specific percentage of affordable housing.

<p>Removed Parking Minimums: Some places have done away with minimum parking requirements for the entire municipality while others have targeted specific zoning districts.</p> <p>Parking Maximums: In a growing number of municipalities, parking minimums have been replaced with parking maximums. In some cases, the amount required as a minimum is directly converted to a maximum. In others, the current standards are rejected altogether and a new analysis is carried out based on local auto ownership rates and commuting patterns.</p>

Opportunity: Consider reducing parking minimums and introducing parking maximums, particularly in Concord Center and West Concord village centers.

Shared Parking

Mixed-use developments offer the opportunity to share parking spaces between various uses, thereby reducing the total number of spaces required compared to the same uses in stand-alone developments. This is a primary benefit in mixed-use development contexts of moderate-to-high density. Shared parking operations offer many localized benefits to the surrounding community, including a more efficient use of land resources and reduced traffic congestion.

Concord does allow for multiple buildings or uses to share parking facilities, so long as the facility provides the amount of parking commensurate with the use needing the greatest number of spaces. The number of spaces can be reduced with approval of the Planning Board, subject to the following conditions:

- Up to 50% of the parking spaces required for educational, religious, lodge and club, indoor amusement, and restaurant uses may be provided and used jointly by banks, offices, retail stores, repair shops, service establishments, and other uses not normally open, used, or operated during similar hours (e.g. residential) if specifically approved by the Planning Board.
- The approval may be rescinded and additional parking shall be provided by the owners in the event that the Planning Board, after notice and public hearing thereon, determines joint use is resulting in a public nuisance or other adverse effects on the public health, safety, and welfare.
- A written agreement, assuring the continued joint use of the common parking area, executed by all parties concerned and approved as to form and length of time by the Planning Board, shall be filed with and made part of the application for a building or occupancy permit.

The Town does allow for two or more property owners to share a parking lot, but the number of spaces provided must still meet the minimum requirements for each use served by the lot. This requirement can be altered by special permit if it can be demonstrated that the peak demand for each of the uses served by the shared lot occur at different points in the day. In other words, unless it can be demonstrated that the users generate peak demands for parking at different points in the day, sharing a lot simply means they combine their minimum required spaces in one physical location.

Generally, aside from the *Multiple Use Developments*, the Town requires that off-street parking facilities be provided on the same lot as the associated use. However, in instances when there are practical difficulties in satisfying the requirement for parking spaces and/or if the public safety

and convenience would be served better by another location, the Board of Appeals can, by special permit, allow non-residential parking on another lot that is both within the same district and 600 street line feet of the principal use.

Mixed Use Development Parking Requirements

The parking regulations for mixed use facilities are similar to the general requirements applicable throughout Concord. Buildings or lots which contain more than one principal use are considered mixed use facilities and each use component is treated as a separate principal use for the purpose of determining parking requirements.²

In a combined business/residential building or industrial/business/residential building, the Board may grant a special permit to allow a decrease in the number of parking spaces if the proposed development is found to be “in harmony with the general purpose and intent of this section and that it will not be detrimental or injurious to the neighborhood in which it is to take place.”³

Figure 3 Shared Parking under Concord’s Zoning Bylaw

Existing Regulation	Best Practices
<p>“Off-street parking facilities for different buildings or uses may be provided and used collectively or jointly in any zoning district in which the separate uses would be permitted, subject to the following provisions:</p> <p>(a) Up to fifty (50) percent of the parking spaces required for educational, religious, lodge and club, indoor amusement, and restaurant uses may be provided and used jointly by banks, offices, retail stores, repair shops, service establishments, and other uses not normally open, used, or operated during similar hours if specifically approved by the Planning Board. The approval may be rescinded and additional parking shall be provided by the owners in the event that the Planning Board, after notice and public hearing thereon, determines joint use is resulting in a public nuisance or other adverse effects on the public health, safety, and welfare.</p> <p>(b) A written agreement, assuring the continued joint use of the common parking area, executed by all parties concerned and approved as to form and length of time by the Planning Board, shall be filed with and made part of the application for a building or occupancy permit.” (7.7.2.4)</p>	<p>Shared parking can be provided within at least a 5 minute walk from the associated use (~1,000 feet).</p> <p>Required parking spaces for all uses in all districts need not be limited to use by residents, employees, occupants, guests, visitors, or customers of such uses and may be used for general public parking. This enhances the inherent “park-once” efficiency of a downtown area. These can be provided publicly or on other private facilities through agreements.</p>

Opportunity: Introduce a more progressive shared parking code that avoids tables, calculations, and models, and instead uses a simple method that lets developers build less than a minimum amount of required parking if they make their spaces fully shared.⁴

² Town of Concord, *Zoning Bylaw*, (April 2011): 7.7.2.6.

³ Town of Concord, *Zoning Bylaw*, (April 2011): 4.2.3.4.

⁴ Sample language: http://www.mass.gov/envir/smart_growth_toolkit/bylaws/SP-Bylaw.pdf

Change of Use Exemptions

Situations arise where the minimum parking requirements interfere with the ability of the owner/occupant to change the use of their property. As discussed above, often the minimum parking requirements set out in the zoning code require more off street parking than is feasible within the constraints of the property. In mid- to high-density town centers where lots are small and available space is limited, this can become a serious obstruction to sensible redevelopment.

Figure 4 Change of Use Exemptions under Concord’s Zoning Bylaw

Existing Regulation	Best Practices
When a building or use undergoes a change, if the change results in a requirement for a greater number of parking spaces than exists on the site, the off-street parking shall be increased to meet minimum parking requirements. Or, relief must be sought and obtained from ZBA.	When buildings and parcels are converted to new uses, exemptions from parking requirements may be granted when providing the required amount of parking on-site is infeasible.

Opportunity: Encourage flexibility, such as project demonstration of shared parking, rather than require minimums for changed land uses.

Parking In-Lieu Fees

In some communities new developments can waive all or part of their minimum parking requirements by making an annual payment (in-lieu of providing parking) to the municipality.⁵ The fee can be used for transportation improvements, or is "banked" to fund current or potential future shared parking facilities. This provision helps the redevelopment of constrained sites while providing a revenue stream to support the construction/maintenance of shared public parking facilities such as a central lot or garage.

Figure 5 Parking In-Lieu Fee Regulation under Concord’s Zoning Bylaw

Existing Regulation	Best Practices
None	Where zoning requirements for minimum numbers of parking spaces exist, a parking in-lieu fee or payment has found great success in the U.S. at reducing parking supply for dense mixed-use areas that have lower parking demand or high potential for sharing. Fees vary widely.

Opportunity: Specifically incorporate in-lieu fees in the zoning bylaws, particularly with modifications to the shared parking zoning language, and changes to parking provision guidance.

⁵ See Needham, MA In-Lieu Parking Fee for Projects <http://www.needhamma.gov/DocumentCenter/Home/View/3274>

PARKING DESIGN

Dimensional Requirements

Requiring buildings to provide a minimum setback encourages greater dispersal of development, which can break up attractive village street walls and decreases the likelihood that one will walk between various uses. Allowing or requiring parking between the building and the street decreases pedestrian safety and introduces potential barriers to a walkable environment.

For the Residence AA and A Districts, there is a minimum front yard setback of 40 feet. For the Residence B and C Districts, there is a minimum front yard setback of 20 feet. Minimum front yard setbacks for Commercial Districts range from 0 feet to 100 feet. Medical-Professional Districts require a minimum setback of 20 feet and 40 feet. Industrial Districts require a minimum 10 foot setback.

Figure 6 Dimensional Requirements under Concord’s Zoning Bylaw

Existing Regulation	Best Practices
All zones have minimum front yard setbacks.	No front yard parking in downtown area.
Exceptions	Reduced or eliminated minimum setback requirements in downtown area.
In the Industrial Park and Limited Industrial Park zoning district, parking may be placed within the minimum side, rear or front yard area where joint parking areas are permitted by the Planning Board through site plan approval (Section 6, Table III, Dimensional Regulations).	
In the West Concord Business and West Concord Village Districts, there is a maximum front yard line of ten (10) feet (Section 6.2.6).	
The West Concord Design Guidelines encourage property owners to place parking areas to the side or rear of the building.	

Opportunity: Consider overlay zones that eliminate minimum setbacks (zoning expected to be clarified at Town Meeting 2013)

Driveway Curb Cuts

Driveway curb cuts are a major source of vehicle-pedestrian-bicycle conflicts and induce congestion on busy thoroughfares due to left turning vehicles. When alternatives are available and feasible, limiting or prohibiting driveway curb cuts along key vehicle, pedestrian, and bicycle routes reduces or eliminates these conflicts, providing safer, more efficient, and less congested public rights-of-way.

The Zoning Bylaw provides guidance on the width of curb cuts to allow for safe passage of cars by each other and into parking lots. The requirements establish minimums for the size of entrance and exit drives, as well as the maximum allowable widths for drives in residential as well as business and industrial districts. These requirements allow for the shared use of an access drive by two or more business owners, which helps to reduce the number of curb cuts on streets.

In Concord, the current curb cut provision applies to residential districts only.

Figure 7 Curb Cut Guidance under Concord's Zoning Bylaw

Existing Regulation	Best Practices
<p>The Planning Board may by special permit authorize the construction or alteration of a driveway in the residential districts so that the driveway serves more than one lot, provided that each lot served by the common driveway is located in a residential district and is in residential use; and, each lot shall have frontage on a street, and such frontage shall otherwise be suitable to provide safe and adequate vehicular and pedestrian access from the street to the principal use of the lot, and further provided that the common driveway:</p> <p>(a) serves no more than three lots;</p> <p>(b) provides safe and convenient access for fire, police, ambulance/rescue and other vehicles to all parcels and residences;</p> <p>(c) enhances the natural environment by providing one or more of the following: reduced pavement or impervious lot coverage; reduced number of curb cuts on public ways, reduced impact to slopes, ledge outcrops or wetlands;</p> <p>(d) provides documented assignment of responsibility for maintenance, snow removal and drainage;</p> <p>(e) is designed in accordance with the Subdivision Rules and Regulations for the Town of Concord for common driveways;</p> <p>(f) is constructed no less than fourteen feet in width (or twelve feet with turn-outs) and no more than one-thousand feet in length;</p> <p>(g) shall not be located within ten feet of a property line of a lot not served by the common driveway; and</p> <p>(h) shall not serve a dwelling located further than one-thousand (1,000) feet from the nearest fire hydrant. (5.3.18)</p>	<p>In downtown or village center zoning districts, reviews emphasize a prohibition of curb cuts and driveway openings along key transit, bicycle, and/or pedestrian routes whenever possible. Where curb cuts are present, standards expect a level crossing for pedestrians (raised driveway) and clear sightlines for exiting motorists to see pedestrians.</p>

Opportunity: Introduce more specific flexibility for curb cuts, especially to encourage shared use or combinations of parking facilities. The existing provision only addresses residential districts; provision should be expanded to business and industrial areas or specifically encourage in another manner.

RELATED MEASURES

Car Sharing

Car-sharing provides individuals with access to a fleet of shared vehicles, allowing them to avoid owning a car, or a second or third car. Car-sharing can also be a tool for businesses and government organizations, which can use it to replace their fleet vehicles. At the same time, car-sharing at the workplace allows employees to take transit, walk or cycle to work, since a car will be available for business meetings or errands during the day.

The Zoning Ordinance does not address car sharing.

Figure 8 Car Sharing Regulations under Concord's Zoning Bylaw

Existing Regulation	Best Practices
None.	A minimum number of car share spaces are required to be provided free of charge to car share services (such as Zipcar), in relation to the amount of parking provided and proximity

	to transit.
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Opportunity: Include car sharing as part of a developer in-lieu package and at developments located near transit.

Unbundling Parking Costs

Unbundling parking costs changes parking from a required purchase to an optional amenity, so that households and employers can freely choose how many spaces they wish to lease. Especially among households with below average vehicle ownership rates (e.g., low income people, downtown residents with access to transit, singles and single parents, seniors on fixed incomes, and college students), allowing this choice can provide a substantial financial benefit. Unbundling parking costs means that these households no longer have to pay for parking spaces that they may not be able to use or afford.

Charging separately for parking is the single most effective strategy to encourage households to own fewer cars, and rely more on walking, cycling and transit. According to a study by Todd Litman⁶, unbundling residential parking can significantly reduce household vehicle ownership and parking demand.

The Zoning Ordinance does not explicitly address the bundling of parking cost. Owners of rehabilitated residential buildings can either provide on-site parking or can utilize municipal or other such parking facilities nearby, by buying an annual parking pass, to meet parking minimum requirements. However, the ordinance does not identify how the parking spaces are associated with residences, i.e., whether they are offered unbundled or as a unit.

There is a reduction in the parking requirement for subsidized low and moderate income housing or elderly housing developments. These types of housing developments are required to provide 1.5 spaces per dwelling unit. Again, this requirement does not unbundle the cost of parking, but does illustrate recognition of reduced need, which is associated with unbundled parking costs.

Figure 9 Unbundling of Parking Cost Regulations under Concord’s Zoning Bylaw

Existing Regulation	Best Practices
<p>While the unbundling of parking costs is not addressed in the Ordinance, reductions in parking minimums for residential units serving populations with less need indicates an initial steps towards effectively unbundling parking costs.</p>	<p>Any parking spaces offered to tenants of a new development must be offered as a fee-based option distinct from charges established for renting, leasing, or purchasing primary-use space within the development. These fees shall reflect market realities (i.e., the actual value of parking).</p> <p>The purpose of this code language is to make the cost of providing parking clear to residential and commercial tenants and buyers, and to help them make more informed decisions about their transportation needs. Unbundled parking also makes housing more affordable for tenants or buyers who do not have a vehicle, without affecting price for others. Typically, unbundled parking leads to reduced parking demand, which in turn lets developers build less</p>

⁶ Todd Litman, *Parking Management Best Practices* (Planners Press, 2006)

	parking and more of the functional building space (whether that is living units, commercial space or office space). Typically unbundled parking reduces parking demand by 10-30% ⁷ depending on circumstances. A conservative approach may be to ease minimum requirements by 20%.
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Opportunity: Specifically include unbundling in the zoning bylaws, especially in denser areas.

Bicycle Parking

Bicycle parking is an essential part of encouraging bicycling and typically serves two important markets. Long-term parking is needed for bicycle storage for residents and employees. This parking is located in secure, weather-protected, restricted access facilities. Short-term parking serves shoppers, recreational users and other. As well as security, convenient locations are a priority – otherwise, bicyclists will tend to lock their bicycles to poles or fences close to their final destination. Bicycle improvements increase mobility, reduce auto dependency, congestion and air pollution and can be a very important mode of transportation for lower-income families.

The Zoning Ordinance does not specify any bicycle parking requirements.

Figure 10 Bicycle Parking Regulation under Concord’s Zoning Ordinance

Existing Regulation	Best Practices
None	Minimum bike parking facilities are provided in relation to the scale of development, and minimum design standards for such parking facilities are specified.

Opportunity: Include short and long term bicycle parking standards in the zoning bylaw, including bicycle rack standards and provision of on-street or publicly available bicycle parking.

Transportation Demand Management Measures

Transportation Demand Management (TDM) refers to a package of strategies to encourage residents and employees to drive less in favor of transit, carpooling, walking, bicycling, and teleworking. It encompasses financial incentives such as parking charges, parking cash-out, or subsidized transit passes; Guaranteed Ride Home programs to give employees the security to carpool or ride transit; compressed work schedules; and information and marketing efforts. TDM programs have been shown to reduce commuting by single-occupant vehicle by up to 40%, particularly when financial incentives are provided.

The Concord Zoning Bylaw does not address Transportation Demand Management.

Figure 11 Transportation Demand Management Measures under Concord’s Zoning Bylaw

Existing Regulation	Best Practices
None.	Pre-Tax transit benefits – Employees are provided with access to “transit checks,” vouchers, or debit card

⁷ Todd Litman, Victoria Transport Policy Institute.

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	<p>systems that allow the use of pre-tax income for purchase of transit fares.</p> <p>Preferential parking for carpooling, for instance 10% of all parking spaces are set aside for carpool vehicles prior to 9:00 AM on weekdays, or provide carpool parking in prime locations.</p> <p>Provide ride-sharing services, such as a carpool and vanpool incentives, customized ride-matching services, a transportation information package for new employees and residents, a Guaranteed Ride Home program (offering a limited number of emergency taxi rides home per employee), and an active marketing program to advertise the services to employees and residents.</p>
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Opportunity: Have a menu of TDM appropriate options for Concord for developer negotiations, or as part of reduced parking requirements.

Figure 12 Zoning Regulations in Concord Center

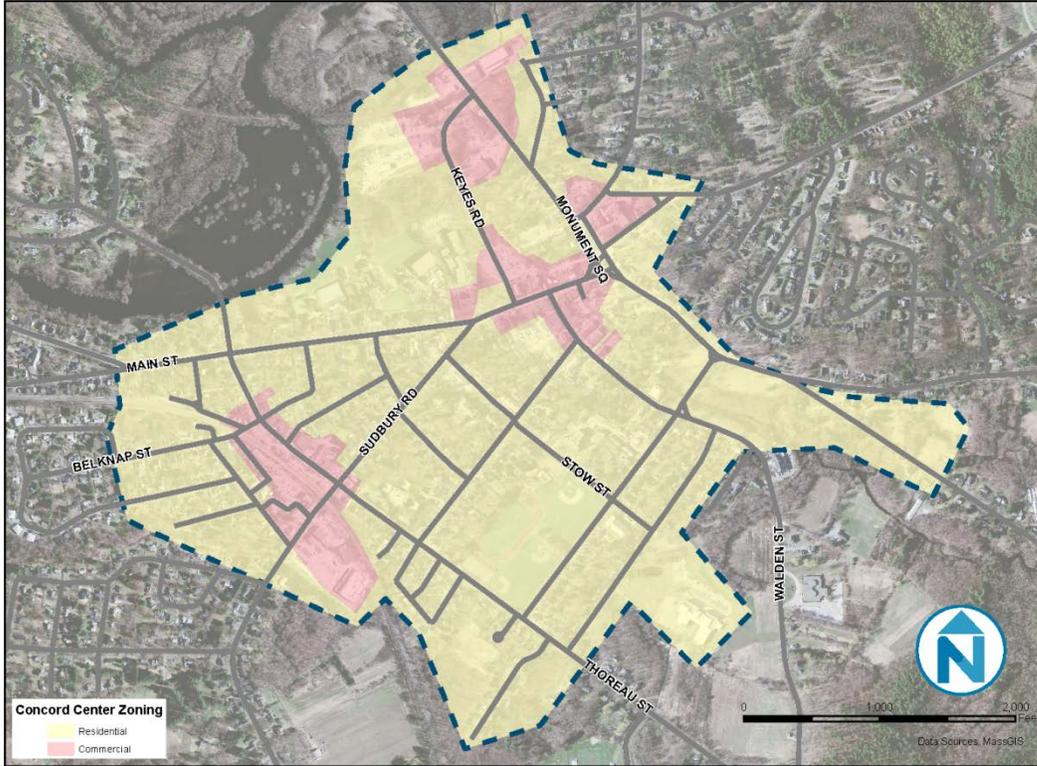


Figure 13 Zoning Regulations in West Concord

