Section Six

August 2000

Non-Residential Development: Community Character Guidelines

Off-Street Parking

GUIDELINES BY TOPIC

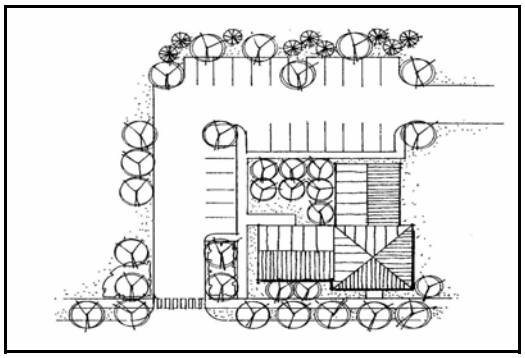
Prepared by:

Nashua Regional Planning Commission

Off-Street Parking Design

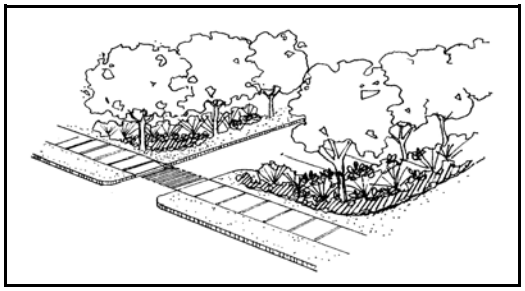
The design of off-street parking areas associated with business development has a major impact on the quality of a site. Community character guidelines consider the issues of distribution of parking around a building. Rear parking lots become feasible when multiple entries are provided into buildings. On street parking affords convenient access to shops, and creates a barrier between the pedestrians on the street and vehicular travel lanes. It may not be feasible or practical to require on-street parking along rural corridors, except in village centers, where parked cars also function to calm traffic. It does, however, make sense to tuck the vehicles out of sight behind buildings to maintain the integrity of the streetscape, whether it is rural or otherwise. The following guidelines address parking lot orientation.

- **Parking lots should be located to side and rear of buildings, and should not permitted in the front setback or be in front of any building adjacent to a street, including corner lots.**
- **Side yard parking should be limited to a single row of vehicles, and should be well buffered from the street.**



Parking to Side and Rear of Buildings

- **Parking lots should be screened from the street and sidewalk with landscaping, berms, walls and/or fences, in accordance with the requirements of Parking Lot Landscaping Guidelines.**



Parking Screened from View

Reduce Pavement with Shared Parking

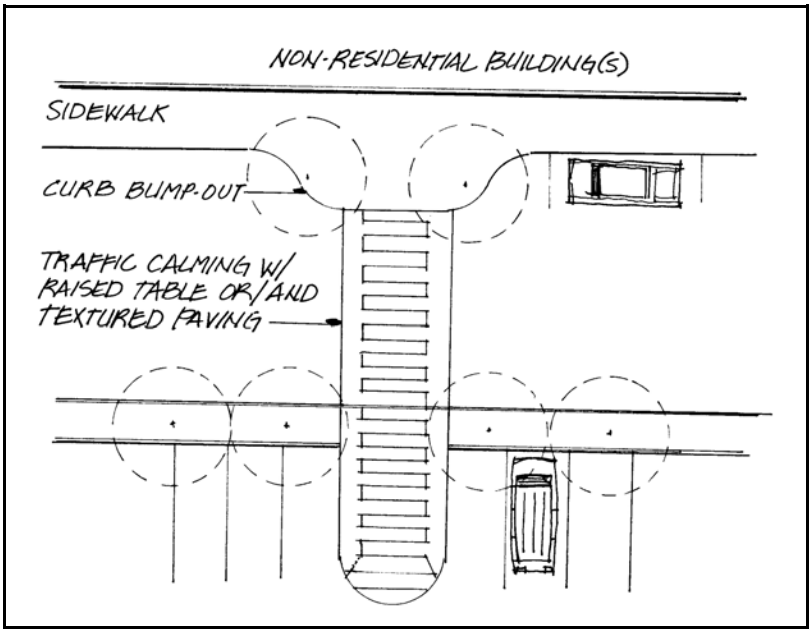
"It makes sense to tuck the vehicles out of site behind buildings to maintain the integrity of the streetscape, whether it is rural or otherwise."

A reduction in side and rear setbacks might be permitted to accomplish the goals of minimizing unnecessary paved surfaces and accommodating shared parking. Shared parking cross easements should be required to guarantee the long term success of managing parking across property boundaries. Often single business parking lots are underutilized most of the day or most days of the week, depending on the nature of the business.

Access to Rear Shared Parking: Lexington, MA

- **Provide enough parking to satisfy 85% peak anticipated demand and/or participate in shared parking arrangements using the same criteria.**
- **Shared parking should be protected by cross parking easement agreements, which should be submitted for review by the community and recorded with the site plan.**

On-Site Traffic Calming

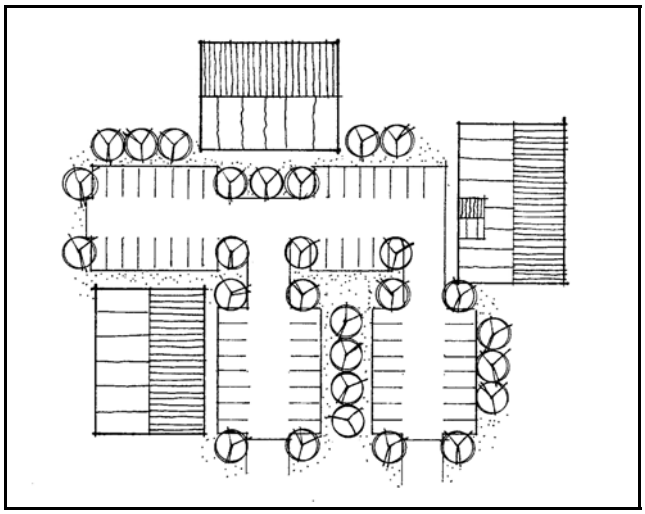


Pedestrian Crosswalk Over Speed Table to Calm Vehicles On-Site

- **Traffic circulation should be designed to reduce speeding.**
- **Continuous travel ways should be no more than 200 feet before interruption by pedestrian cross walks over speed tables, T-intersections, or other design element to calm vehicular movement on site.**
- **Semi-circular drop-off driveways should be one-way.**
- **Proper signs and markings should be required to reinforce circulation patterns and provide direction to destinations.**

Design to Maximize Green Space

- Parking areas should be broken down into small lots, separated by planting medians, walkways and buildings.
- Permeable parking surfaces are encouraged where possible. Hard surfaces should be minimized to reduce negative hydrologic impacts.
- A minimum of 10% of the interior of the parking lot should be set aside for landscaping areas.

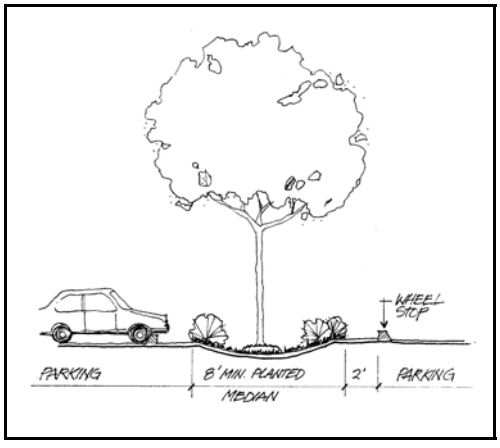


Parking Broken Down into Smaller Areas

Parking Area Delineation

- Wheel stops should be used at every parking space that fronts a pedestrian walkway and at landscape areas that are not protected by curbing.
- Wheel stops should be installed at a minimum of two (2) feet from the face of the curb or edge of pavement to effectively protect walkways, landscaping and/or signs.
- End aisles should delineate primary traffic aisles, and end islands should be a minimum of ten (10) feet wide (thirteen (13) feet wide if sidewalks are included), curbed and landscaped.
- Striped pavement should not be permitted to delineate an end or internal island.

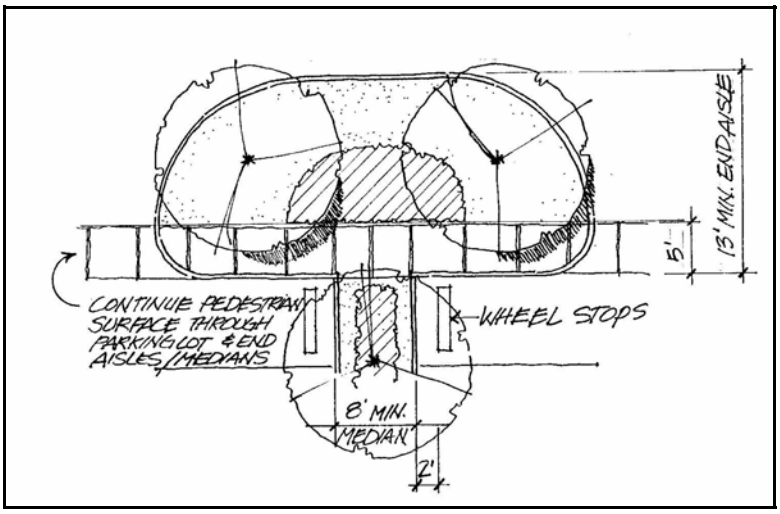
Sidewalks Within Retail Parking Medians: Nashua, NH



Planting Medians

Well Landscaped Parking & Access Drive: Nashua, NH

Median Landscaping



Parking Lot Medians/End Aisles/Wheel Stops

- A minimum eight (8) foot wide planting median should be provided between rows of parked vehicles.
- Medians and landscaped areas should be designed to accept and retain stormwater infiltration. This can be accomplished by using porous curbing, wheel stops or other elements to permit the free flow of water, and prevent the intrusion of vehicles into the median.

Pedestrian Surfaces

Well Defined Pedestrian Surfaces: Milford, NH

- Pedestrian circulation should be continuous throughout the site, from the parking area to the entrances of all structures and public spaces.
- Pedestrian surfaces should be marked by accent strips of brick, concrete block or textured paving materials to define pedestrian walkways and crosswalks.

Snow Storage

Wetlands and Surface Waters to be Protected from Parking Lot Run-off

- Adequate space for snow storage should be provided so that run-off from snow melt will not have a negative impact on water quality. This is particularly important in aquifer recharge areas or near streams, wetlands or surface waters.

Section Seven

August 2000

Non-Residential Development: Community Character Guidelines

Public Spaces: Pedestrian/Bicycle Access & Amenities

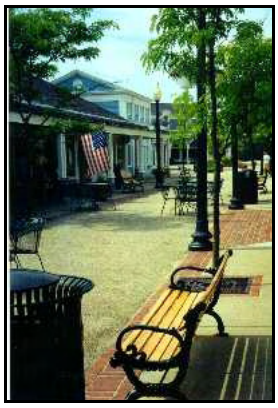
GUIDELINES BY TOPIC

Prepared by:

Nashua Regional Planning Commission

Pedestrian Scale Design

Pedestrian scaled designs must include pedestrian access and public amenities. The site plan should clearly express the need for separation between pedestrian and vehicular traffic. Modeled after traditional village centers or Main Streets, the spaces between parked vehicles and buildings need to provide comfort, safety, visual stimulation, and opportunities to gather. The implementation of guidelines can help to create a rewarding pedestrian experience in commercial and mixed use environments.



Pedestrian Amenities

- The details of pedestrian-scaled amenities, including seating, street lighting, trash receptacles, etc. should be coordinated for the project, or along a complete block in a village-centered project.
- A sense of entry into the site and into businesses within the site should be created through landscaping, facade treatment and signage.

Community Design

Tree-lined Street Linking Open Spaces

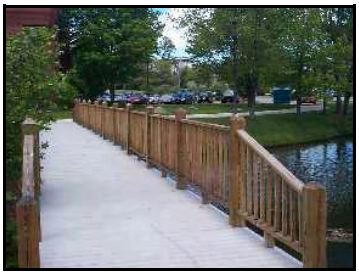
- Open space should be incorporated into site design through the use of:
  - commons and squares
  - tree-lined streetscapes linking open spaces
  - prominent architecture and open spaces terminating streetscape vistas

Pedestrian Circulation

A pedestrian circulation layout plan should be submitted as part of development proposals to consider on-site patterns and conflicts, and off-site generators of pedestrian movement, such as adjacent businesses, open spaces, future transit stops, public buildings, and nearby residential neighborhoods.

Seating Along Sidewalk: Lexington, MA

Pedestrian Friendly Access: Bedford, NH



Pedestrian Access Linking Parking Areas Over Water Amenity: Nashua, NH

- **Provide for pedestrian friendly spaces between buildings.**
- **Sidewalks and plazas should be designed for comfortable use by pedestrians with landscaping, overhangs and canopies.**
- **Include continuous integral walkways connecting entries, focal points, transit stops and street crossings, including appropriate off-site connections.**
- **Access for disabled persons should be incorporated into the overall pedestrian circulation system, in compliance with the Americans with Disabilities Act.**

Access from Street to Buildings

Sidewalk from Street Through Parking Median: Nashua, NH

Sidewalk to Buildings and Along Streets: Andover, MA

- **Provide sidewalks along the frontage of all public streets and public entrances.**
- **Business and institutional buildings should be laid out to maximize walking and biking access.**
- **Provide weather protection within thirty (30) feet of all customer entrances.**

Pedestrian Amenities

- In addition to sidewalks and weather protection, a minimum of two (2) of the following amenities should be incorporated into each project:
  - patio/seating area
  - transportation center
  - window shopping walkway
  - outdoor playground
  - garden
  - kiosk
  - fountain
  - clock tower
  - additional public spaces

Open Space Amenities: Hudson, NH

Trees & Seating Along Sidewalk: Lexington, MA

"…the spaces between parked vehicles and buildings need to provide comfort, safety, visual stimulation, and opportunities to gather"

Enhancements for Gathering & Comfort

- Incorporate landscaping, including shade and accent trees, shrubs, and planting beds.
- Street furniture should be provided in public spaces for the comfort and enjoyment of pedestrians.
- Street furniture may include benches, tables, drinking fountains, trash receptacles and information kiosks.

Open Space Amenities: Milford, NH

- Soften the effect of asphalt by use of stone dust, Portland dust or chip seal.
- Use cobbles, brick, pavers, or planting strips to break up paved areas.

Decorative Pavers for Driveways in Place of Asphalt: Lexington, MA

Amenity Materials

Wall and Fence Details: Andover MA, & Nashua ,NH

- Fences and walls should be of traditional materials such as wood, brick, stone or iron. Existing walls should be preserved or reconstructed.
- The use of stucco and cinder blocks is discouraged.
- The use of a cap or cap rail is strongly encouraged with other design elements to modulate the top line of the wall.
- In all cases, fencing material should relate to the architectural elements of the primary structures on site.

Accommodations for Bicycles & Transit Users

Covered Bicycle Parking: Minuteman Bicycle Trail: Lexington, MA

Bicycle Trail Access to Parking for Retail & Employment Centers: Lexington, MA

- Provide adequate, secure, covered bike parking near public and employee entrances.
- Short-term bicycle parking should be highly visible from public places, retail uses, schools, libraries and recreation areas.
- Long term bicycle parking would provide a higher degree of security and weather protection at employment centers, park & ride lots, and transit stops.
- Bicycle racks should be designed so that they support locking the frame and wheels.
- Access for bicycles should be provided from streets and trails onto and throughout sites.

Section Eight

August 2000

Non-Residential Development: Community Character Guidelines

Landscaping Guidelines

GUIDELINES BY TOPIC

Prepared by:

Nashua Regional Planning Commission

Overview of Site Landscaping

Site landscaping elements provide a number of benefits that address site context issues, including the relationship of buildings to the site, and the amelioration of the parking lot environment. Landscaping can define spaces, buffer objectionable views, and enhance the visual experience of a place. The intent of landscaping guidelines is to achieve high quality site appearance, to assure design compatibility, to direct character and form, to conserve water and to enhance the overall value of the community. Site landscaping standards are intended primarily for non-residential development, unless the Planning Board requires additional landscaping as a condition of approval for a specific site. These standards are provided for the general health and welfare of the citizens through the conservation of water, reduction of air pollution, and maintaining public safety. Landscaping guidelines are also intended to assist applicants in achieving a quality design, which will enhance the character of development in communities.

Preservation of Existing Features

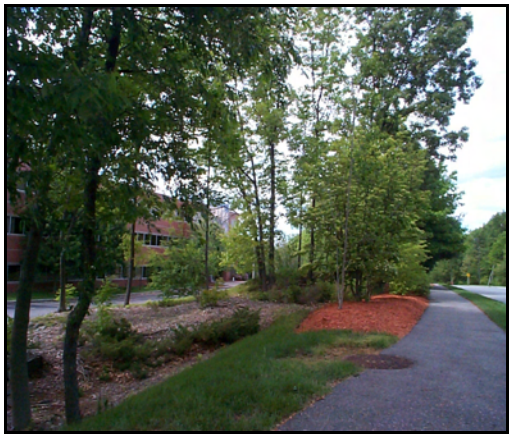
Existing Features Preserved: Hudson, NH

- Retention of natural features and existing vegetation is recommended where possible.
- Existing healthy mature trees (6" caliper or greater) should be retained as practical and incorporated into the overall landscape plan.
- Existing topography should be maintained. Those areas that must be disturbed should be replaced with a minimum of 4" of suitable topsoil and then be replanted with grass seed, sod or other vegetative groundcover.
- Revegetated areas should be replanted with hardy native species appropriate to the site.

General Landscaping Requirements

"The intent of Landscaping Guidelines is to achieve high quality site appearance, to assure design compatibility, to direct character and form, to conserve water and to enhance the overall value of the community."

Well Landscaped Commercial Site: Hollis, NH



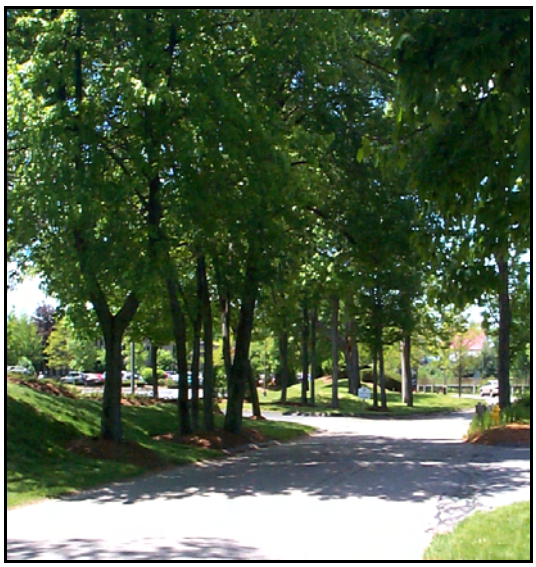
Buffering Parking Along Street Edge: Andover, MA

Trees & Shrubs Provide Off-site Buffer: Andover, MA

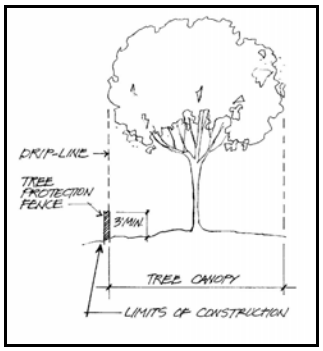
- A landscaping plan should be submitted with each application for site plan review showing existing and proposed features, and the locations of all plant materials. A plant schedule should accompany the plan, indicating the botanical and common names, size, quantity, and description for all proposed plants. Existing trees, shrubs and plant beds to be retained should be described.
- Dead vegetation should be promptly replaced, based on standard seasonal planting practices with healthy living plants in all required landscape areas. All planting areas should be landscaped with a combination of climate tolerant plant material and protective ground cover. Bare soil should not be permitted.
- No loam or other topsoil should be removed from site as part of site development. Topsoil should be appropriately stockpiled and stabilized for redistribution within new planting areas.
- Side slopes should not exceed thirty-three (33) percent (3:1 slope), and should be appropriately stabilized with loam and seed, hydro-seed, sod, ground cover or mulching materials.
- Planting holes for trees should be at least two to three times the width of the rootball and should be no deeper than the container. Shrubs should have a planting hole three to five times the width of the rootball and should not be deeper than the rootball itself.

Protection of Existing Vegetation

- Existing landscaping, trees and planting materials to be retained should be protected as necessary during construction to avoid damage.
- Tree wells over 6 inches deep or other landscape features that have the potential to present a falling hazard to the public should have grates, fences or other protective measures installed.
- All trees where required should be welled and protected against change of grade.



Retain & Protect Mature Existing Trees: Nashua, NH



Tree Protection Detail

"Landscaping can define spaces, buffer objectionable views, and enhance the visual experience of a place."

Minimum Landscape Requirements

- Landscape plans should incorporate water conservation planting techniques, and hardy plant material.
- A minimum of forty (40) percent of land should remain in its natural state or be maintained as appropriately landscaped area. Undisturbed wooded areas may be included in this calculation.

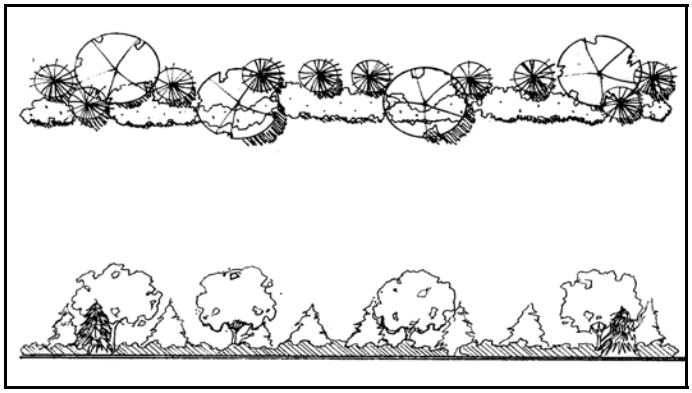
Include Undisturbed Areas in Landscape

Utility Placement

- Existing and proposed overhead and underground utilities should be considered when selecting size, type and placement of proposed landscaping to avoid damage or potential future conflicts.

Streetscape with Buried Utilities: Milford, NH

Buffer Planting



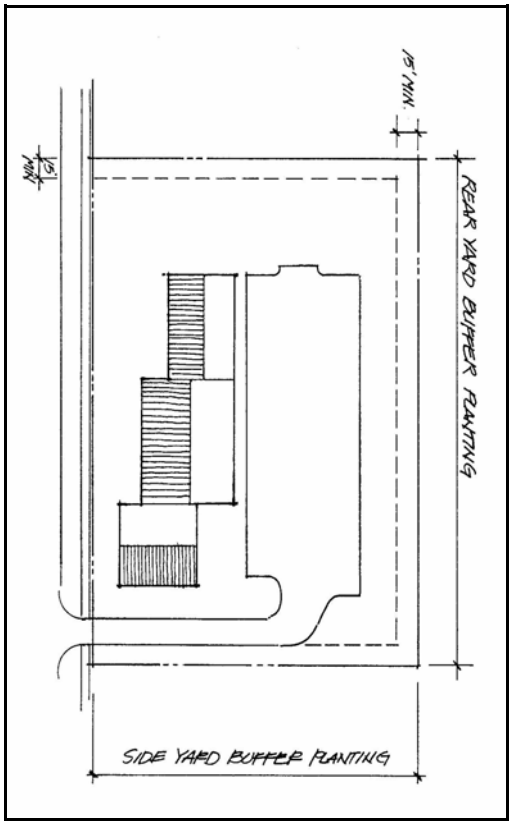
Buffer Planting: Plan View and Elevation

- Buffer areas should retain existing vegetation where possible.
- Buffers should be provided to screen incompatible uses from all residential, church, school, park, playground, or historic sites within 200 feet or within view of the site.

Side and Rear Yard Landscaping Area

New Side Yard Planting: Hudson, NH

Side Yard Planting: Nashua, NH



Side & Rear Yard Buffer Planting

- Side and rear yard landscaping should include a minimum buffer planting strip 15 feet wide, constructed to provide a dense visual four season screen, with a layering of trees and shrubs, eighty (80) percent evergreen.
- One evergreen tree should be included for every 15 feet of lot line, and one shade tree for every 40 feet of lot line, incorporating berms, fences and walls as necessary.
- Buffer strips should be waived where the Planning Board has permitted shared parking and cross access and/or may be reduced between compatible uses.

Definitions of Required Plant Material

For recommended plant materials, refer to *Trees and Shrubs in New Hampshire: A Guidebook for Natural Beauty Projects, Extension Bulletin 163 (revised)*.

Shade Tree

Mass Shrub Planting Bed

Evergreen Tree

Perennial Beds

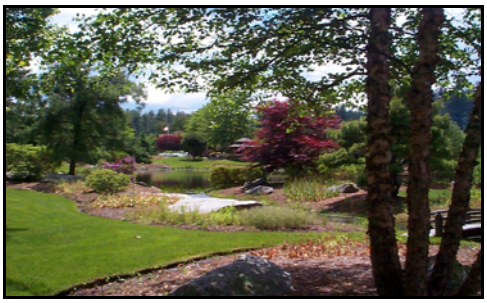
- Shade trees should be hardy, drought and salt tolerant, 12 feet and deciduous. Such trees should be planted at 2½ to 3 inch caliper.
- Evergreens should be hardy with a minimum of 6 foot height at planting, full and well branched, unless otherwise specified by the guidelines. Evergreen trees are typically planted in groups of a minimum of three trees, diagonally spaced according to the species requirements.
- Evergreen shrub should be a minimum of 2½ feet high at planting, full and well branched, unless otherwise specified by the guidelines.
- Deciduous or flowering shrubs should be planted at 3½ foot height, full and well branched, unless otherwise specified by the guidelines.
- Ground cover should be a low growing plant, other than turf or grass, which forms a continuous cover over the ground surface.

State & Local Requirements

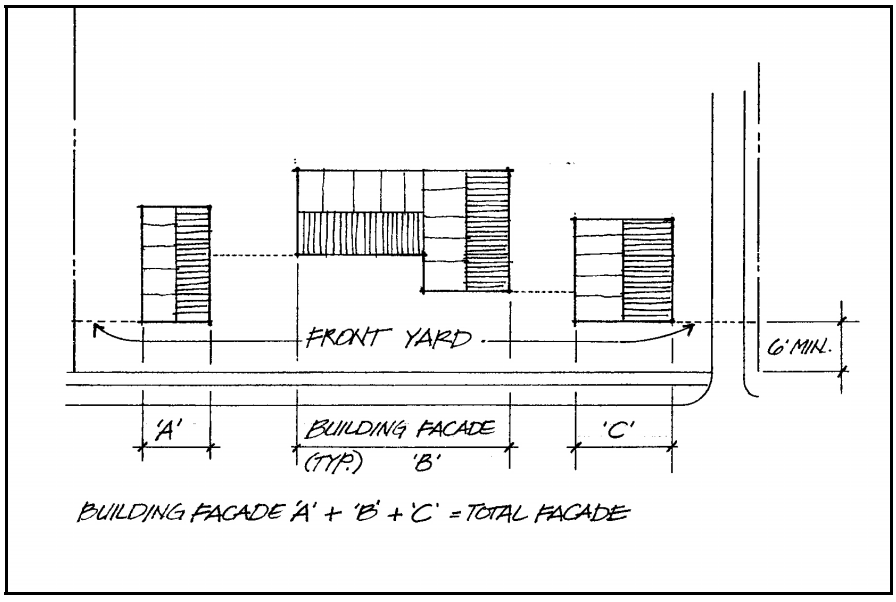
Site Entry Landscaping: Andover, MA and Hollis, NH

- All local and state requirements for setbacks and sight distance should take precedence for selection and placement of land-scaping features, as applicable.

Front Yard Landscaping Area



Alternative Front Yard Landscaping: Lexington, MA & Hollis, NH



Front Yard Landscaping Diagram

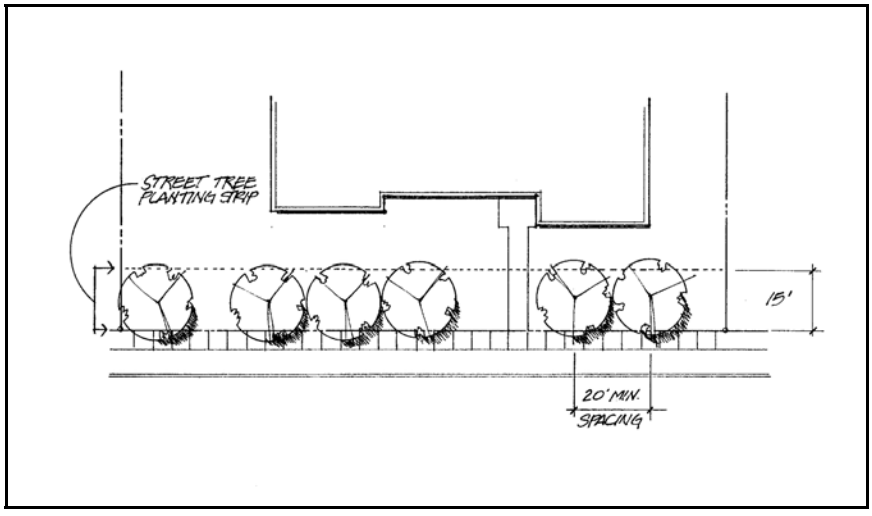
- The front yard landscaping area should be of variable width (minimum six (6) feet), and should provide one deciduous or evergreen tree per 30 feet of front building facade. At a minimum, these trees should be 2 inch caliper/10 foot height/5 foot spread, and well branched.
- One shrub per each 5 feet of frontage, with 40% evergreen material should be provided.
- Plant materials should be massed for maximum effect.
- Front yard landscaping area may contain any of the following:
  - Public utility easements and open surface drainage easements should not occupy more than thirty (30) percent of the required landscape area.
  - Mechanical installations may be used, provided that they do not encroach more than five (5) feet into the required landscape area. Such equipment should be 100% screened with landscape material from any view from a public right-of-way, pedestrian walkway, or off-site area requiring buffering.

Shade Trees Are Critical

Landscaping guidelines incorporate shade trees along road frontages, access drives and in parking lots. Developers are encouraged to provide a comprehensive landscape plan that provides adequate tree cover and additional landscape elements that consider plant hardiness and water conservation. Landscape plans are more than a decorative afterthought. They enhance the human environment and mitigate the impacts of development.

Requirements for Shade Trees

- Shade trees should be required along streets, parking and drives as specified in these regulations.
- Street tree areas should be a continuous fifteen (15) foot wide strip parallel to the lot frontage.
- Business development or expansion should provide trees along street frontage, with one shade tree per each thirty (30) linear feet of frontage, spaced not less than twenty (20) feet apart. Trees may be clustered.
- All landscaping materials adjacent to parking or access areas should be properly protected from damage by vehicles, with curbing or wheel stops as appropriate.



Street Tree Planting Diagram/Shade Tree Photographs: Nashua, NH

Benefits of Landscaping

Landscaping to Enhance the Site: Nashua, NH & Andover, MA

- Well-executed parking lot landscaping can provide many benefits, including mitigation of the harsh environment produced by expanses of asphalt or gravel.
- Landscaping can provide space for continuous pedestrian walkways, creating a separation from vehicular travel ways.
- Stormwater can be mitigated in landscaped medians, reducing the requirements for unsightly detention basins.
- Well landscaped parking areas, using land forms, vegetation and walls or fences, can effectively buffer a parking lot from any direction off-site.

Landscape Maintenance

- Landscaping, trees and plants required by regulations should be planted in a growing condition according to accepted horticultural practices, and should be maintained in healthy growing conditions. Any landscaping, trees and plants that are in a condition that does not fulfill this intent after the first winter or at any time during the second year after planting should be replaced during the next planting season.
- All proposed plantings should be appropriate for the soils, weather and environmental conditions of the site. Particular attention should be paid to potential road salt and other deicing chemicals. Plant materials should be of specimen quality conforming to the *American Standards for Nursery Stock* (ANSI Z60.1-1980 or later revision) and should be guaranteed for at least one and one half years.
- All approved landscaping should be subject to the performance guarantee requirements of the Planning Board. These requirements should be sufficient to cover the cost of replacement of 25% of all plantings. The terms of the requirement should be for two years from the time of planting.

Section Nine

August 2000

Non-Residential Development: Community Character Guidelines

Parking Lot Landscaping

GUIDELINES BY TOPIC

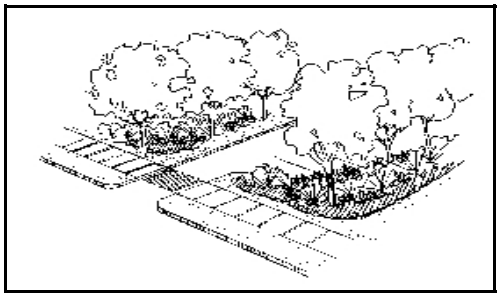
Prepared by:

Nashua Regional Planning Commission

Benefits of Parking Lot Landscaping

Well-executed parking lot landscaping can provide many benefits, including mitigation of the harsh environment produced by expanses of asphalt or dusty gravel. Landscaping can provide space for continuous pedestrian walkways, and create a separation from vehicular travel ways. Stormwater can be mitigated in landscaped medians, reducing the requirements for unsightly detention basins. Well landscaped parking areas, using land forms, vegetation and walls or fences, can effectively buffer a parking lot from any direction off-site.

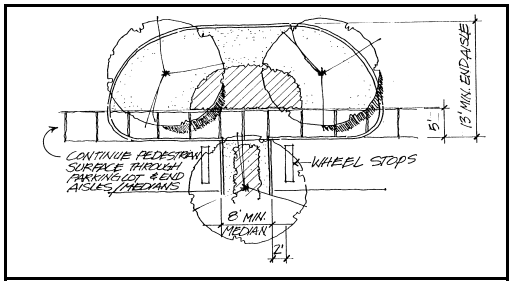
Parking Lot Screening



Well Screened Parking Area

- **Screening of parking areas from all views off-site, including streets and adjacent parcels should be provided. An exception can be made when shared and connected parking between sites is approved by the Planning Board.**

Landscaped Medians



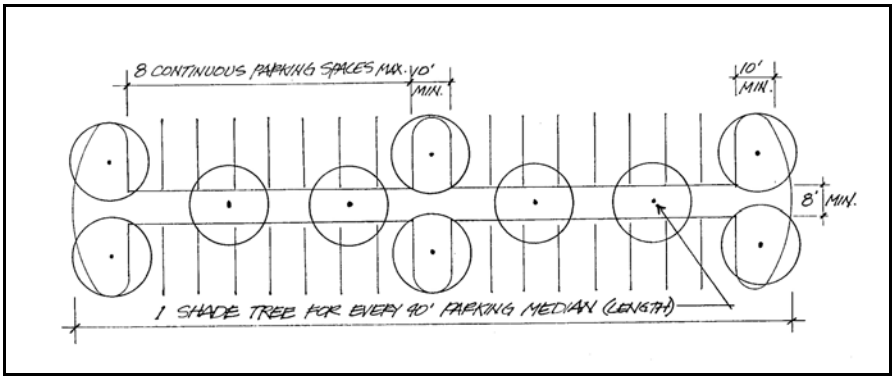
Landscaped Median

- **Landscaped areas and medians should be designed to accept and retain stormwater infiltration. This can be achieved by using porous curbing, wheel stops or other elements to permit the free flow of water. The intrusion of vehicles into the median should be prevented.**

Parking Lots with Visual Appeal

Well landscaped parking lot

- A minimum eight (8) foot wide planting median should be provided between adjacent rows of parked vehicles.
- One shade tree should be provided per forty (40) feet of parking. This should be in addition to minimum parking lot requirements.
- The maximum number of continuous parking spaces permitted should be eight (8). A minimum ten (10) foot wide landscape island should be incorporated into the design.
- Each island should contain at least one (1) shade tree.



Parking Lot Planting Diagram for Maximum Continuous Parking

Planting Requirements

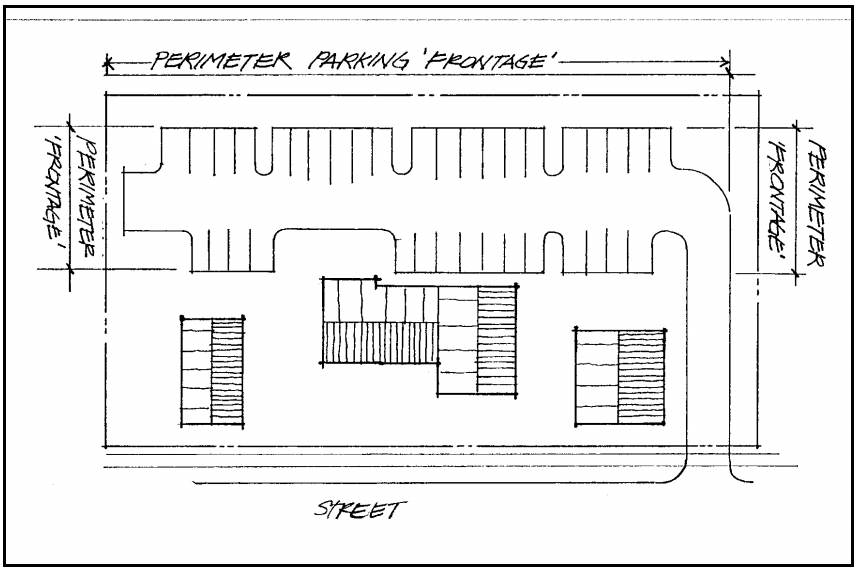
Shade Trees in Parking Lots Provide Relief From Paved Surfaces

- A minimum of 10% of the interior of the parking lot should be set aside for landscaping areas, exclusive of paved pedestrian surfaces.
- The landscaped area should be calculated as 10% total area of paved drives, parking areas and drive aisles.
- A minimum of 1 shade tree should be planted per 1,600 square feet of paved area (or 1 per every 5 parking spaces).
- One shrub per 200 square feet of paved area should be planted, or 1.6 shrubs per every parking space.

Perimeter Landscaping Requirements

- The advantages of perimeter landscaping include:
  - visual screening of automobiles
  - summer shading of paved surfaces
  - wind buffering
- Perimeter planting requirements:
  - 2 drought and salt tolerant shade trees per 50 feet of perimeter edge, all sides, at 2½ to 3 inch caliper at a height of 12 feet
  - one shrub per 5 feet of frontage at 2½ to 3 foot height at time of planting, 40% evergreen material
- Buffer requirements can be combined with perimeter landscaping requirements where areas overlap.
- Perimeter means parking area adjacent to property boundaries.

"Landscaping can provide space for continuous pedestrian walkways, creating a separation from vehicular travel ways."



Perimeter Parking Landscape Diagram

Perimeter Parking Planting: Fishkill, NY & Nashua, NH

Section Ten

August 2000

Non-Residential Development: Community Character Guidelines

Managing Stormwater by Site Design

GUIDELINES BY TOPIC

Prepared by:

Nashua Regional Planning Commission

Design Issues & Stormwater Management

Managing Stormwater on Site

- Natural areas should be set aside. An undisturbed buffer should be retained around all wetlands and surface waters as required by the wetland ordinance of the municipality.
- All storm water treatment areas such as treatment swales, detention and retention areas, and mitigation areas should be planted with grasses, shrubs and/or other plantings sufficient to prevent soil erosion and to promote proper treatment of the proposed runoff.
- Keep buildings, streets, parking lots and other construction out of the post-development flood plain to reduce construction and post-construction drainage problems.
- Buffers may be used for greenway trails, and the creation of stormwater wetlands.