City of Lewiston, Maine

SITE PLAN REVIEW & DESIGN GUIDELINES

City of Lewiston Planning Department

December 1987
Amended February 1989 Amended March 1991

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INTRODUCTION

PURPOSE AND INTENT

The purpose of the Design Guidelines is to illustrate ways to implement the City's urban design goals on a project by project basis. The Guidelines are intended for use by applicants in preparing for Development Review, by the Staff Development Review Committee and the Planning Board in reviewing and approving proposed project plans, and by the Planning Staff and other city agencies in reviewing and commenting on plans.

The Planning Board and Staff should consider each project in light of how it will contribute to the City's overall urban design goals, how it will relate to and interact with adjacent developments, and what the specific conditions are of the surrounding context and the site.

The diagrams included in the Design Guidelines are not intended to be the absolute solution for a particular issue or objective. Rather, they are meant to illustrate graphically the meaning of the guidelines and suggest a starting point for individual site designs to be prepared by the applicants. Subject to discussion and review with the City and its agencies, an applicant may suggest innovative techniques, which respond to the site characteristics, in order to achieve urban design objectives.

The result of the Development Review Process should not be absolute conformity and sameness, but rather a harmony between new and old development, and between adjacent developments within each segment of an urban corridor or neighborhood.

APPLICABILITY AND DEFINITIONS

These Design Guidelines apply to all projects requiring development review as set forth in Article XIII of the Land Use Code. Projects are classified as Minor development and Major development as described in the development review requirements of the code.

Because the site and its surroundings are so critical to decisions made under development review, these Design Guidelines also make another distinction based on the physical context of the site and the part of the city in which the proposed development will take place. The context definitions are as follows:

Urban Neighborhoods
Urban Neighborhoods are characterized by established housing and commercial development, and may include historically or architecturally significant buildings. Densities are relatively high and buildings are in close proximity to one another. Buildings relate strongly to the street, and the streetscape is well defined by street trees, building facades, and pedestrian activity. Automobile travel speeds are relatively slow, and pedestrian traffic is high.

Urban Neighborhoods generally correspond to the following zoning districts: Downtown, Office-Residential, Institutional-Office, Urban Enterprise, Neighborhood Conservation A, and Neighborhood Conservation B.

Suburban Strip
The organizing principle of the Suburban Strip is the highway, and development is largely geared for automobile convenience. Buildings are spatially separated, and have a relatively low density due mostly to the high parking ratios. Existing land uses are mixed and include residential, commercial retail and office. Some parcels are not yet developed.

Historically, buildings have been of relatively inexpensive construction, and lack widely recognized architectural or historical significance.

Suburban Strip areas generally correspond to the following zoning districts: Community Business and Highway Business.

Rural Areas
Rural areas include both open agricultural fields and woodlands. The land is either undeveloped or, developed at very low intensity with scattered farms or cottages. Although some parcels may abut a highway, they are generally of such a depth that most development will occur off the highway frontage in the form of residential enclaves, large scale retail centers, and/or campus style office industrial parks.

Rural areas in which the Development Review process can be initiated generally correspond to the following zoning districts: Low Density Residential Development, Medium Density Residential, Office-Service and Industrial.

URBAN DESIGN OBJECTIVES

Most new development requiring development review will occur on parcels that are on, or adjacent to, the City's radial corridors: Main Street, Sabattus Street, and Lisbon Street. The radial corridors are gateways to the City, and development along their length sets the image for the city as a whole. The legibility of these main corridors should be improved by the following:

- Placing landmarks and reference points at distinctive points along the route;
- Creating districts of distinct character along the way;
- Reinforcing the street edges with trees, infill development, and closer building setbacks;
- Reducing the garish signage, turning traffic, and vehicular congestion.

Commercial and existing residential uses currently share an uneasy coexistence in these corridors. Actions should be taken to improve the compatibility of these two uses including the following:

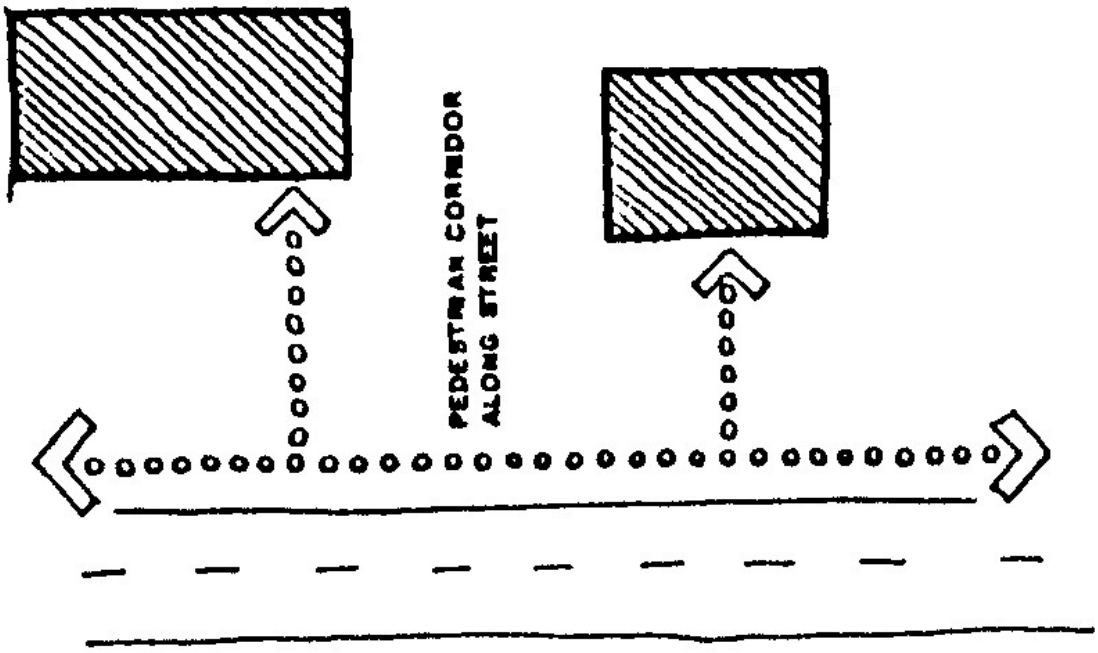
- Creating new developments with scale, massing, and setbacks that are compatible with the existing development that surrounds it;
- Converting and modifying older residential structures in such a manner that is sympathetic to the original building and to its neighbors.
- Placing substantial buffers to mitigate visual and nuisance impacts, where the buildings and site development scale are vastly greater or in close proximity to the surrounding residential development;
- Orienting local commercial development to residential neighborhoods; and orienting regional services to the highway.

Congestion on the strip is inevitable as long as regional access and local shopping trips remain joint functions of the corridor. The traffic operation on the corridors, however, may be improved by the following:

- Encouraging access via side streets, back streets and/or shared circulation ways, where appropriate;
- Minimizing points of entry and exit onto the strip through the use of shared access drives;
- Minimizing the number of multiple destination, stop-and-go trips along the strip by concentrating complementary developments at higher densities, thereby allowing pedestrian access between activities and opportunities for shared parking.

There should be a place for the pedestrian user, including shoppers, employees, residents, and visitors. The pedestrian environment should be improved by the following:

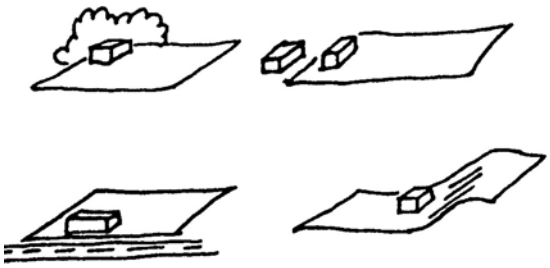
- Creating a network of pedestrian access ways between developments and between the strip and residential districts;
- Ensuring the safety of the pedestrian by delineating pedestrian zones with visual clues, curbs and special paving materials;
- Accommodating pedestrian crossings of the highway with signalized crosswalks, lighting, median dividers, curbs, and/or special paving materials.



DESIGN CRITERIA - SITE PLANNING

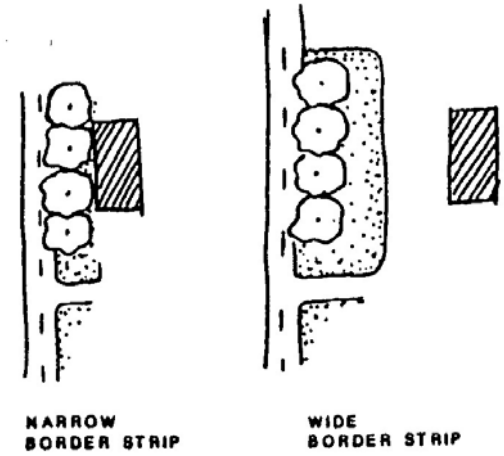
Site Layout

General



For all projects, building and parking layout shall relate to natural topography and vegetation, and to the surrounding built environment. Every effort shall be made to avoid the condition of a building surrounded by asphalt. For instance, buildings may be placed against a strong edge condition that is found on, or adjacent to, the site including a street, a wooded area, a hill slope, or an adjacent building. Buildings may be grouped together to create pedestrian-accessible environments on-site, on abutting sites, or on opposite sites. Landscaped areas may be introduced to break down the scale of the site and to create edge conditions where necessary.

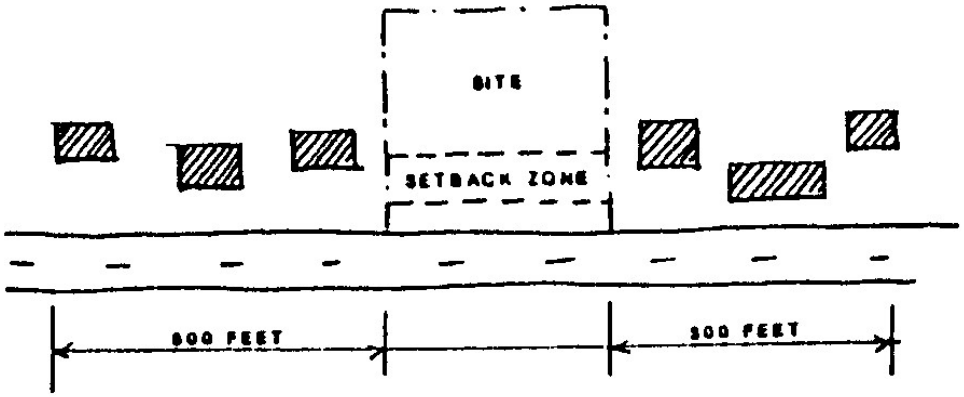
For all projects, parking lots shall be visually broken up to create a sense of smaller outdoor rooms. These smaller areas can be created by the careful site planning of building location(s), road alignments, and landscaping masses (see also "Landscape Architecture - Parking Areas").



For all projects, the further back the building is from the street edge, the wider the landscaped border strip along the roadway shall be (see Table 1).

TABLE 1	
BUILDING SETBACK TO BORDER STRIP PROPORTIONS	
Border Strip (feet)	Building Setback* (feet)
10	10 - 80
15	80 - 145
20	145 - 210
25	210 - 275
30	275 - 340
*Setback measured from edge of the street, or road shoulder where present.	

Where a Non-Residential project (Major or Minor) abuts residential properties, a buffer of landscaping, setbacks, walls, grade elevations and/or earthwork berms shall be installed to screen the noise, activity levels, and visual impacts of the development (see "Landscape Architecture - Buffer Areas").



For all projects, exterior service, loading, storage, dumpsters and utility areas shall be located at the side or rear of the building, and shall be screened or sheltered so as to minimize visibility from sensitive view points such as pedestrian paths, building entries, and abutting residential properties (see "Landscape Architecture - Buffer Areas").

Urban Neighborhoods

In Urban Neighborhoods, the setback for any new building (Major/Minor, Non-Residential/Residential) shall be the average of the setbacks for existing buildings within 500 feet on either side of the proposed building site. With reviewer discretion, the proposed setback may fall within a reasonable range of the existing average setbacks.

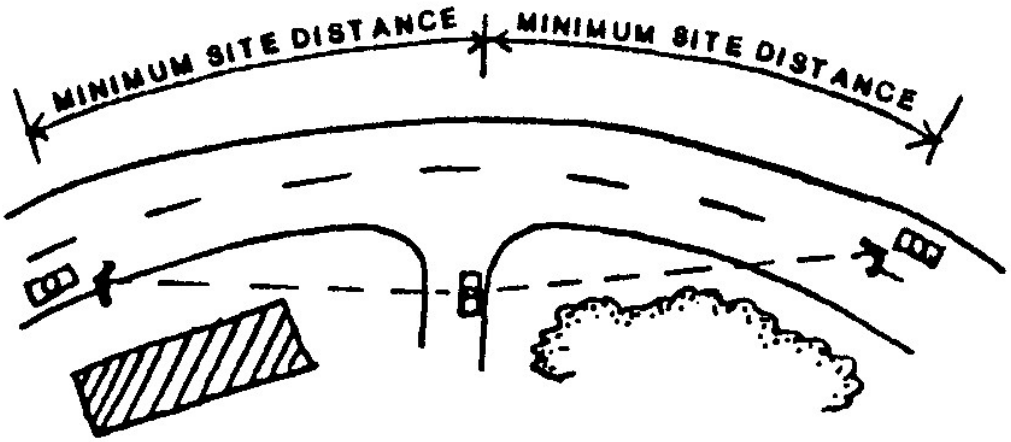
In Urban Neighborhoods, parking for all development, modifications, and/or conversions shall be in the side or the rear yard, and not in the front yard.

In Urban Neighborhoods, where there are no alternatives to truck loading on the street at the front of a business, mitigating measures such as off-peak loading hours and the removal of parking in the front of the building shall be implemented.

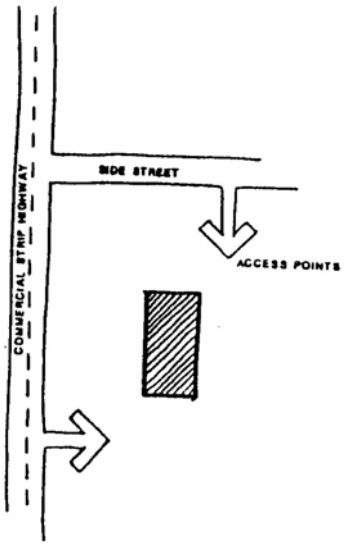
Driveway Entrances

General

For all projects, any exit driveway shall be so designed as to provide the minimum sight distance as recommended by the Maine Department of Transportation, measured in each direction from the point at which the driveway meets the public or private right-of-way.



For all projects, driveway entrances shall be defined with vertical curbs, and where appropriate, border strips. A transition between vertical curbs and non-curbed pavement edges shall be provided.



For all projects, shared driveway entrances shall be encouraged for adjacent sites, in order to minimize curb cuts.

For all projects, access from local side streets shall be encouraged wherever feasible. This is particularly appropriate for residential projects, and-for local retail and local service businesses, provided that they do not interfere with predominantly residential neighborhoods.

Minor Projects

For minor projects, a single curb cut is recommended as long as emergency vehicular access is ensured.

For minor projects, the width of a two-way driveway entrance shall be 20 to 24 feet wide.

For minor projects, the width of a one-way driveway entrance shall range between 10 and 12 feet.

Major Projects

For major projects, a maximum of two (2) curb cuts on any one road frontage is permitted; less than two curbs shall be encouraged.

For major projects, the width of a two-way driveway entrance shall be 24 feet, with 10 to 12 feet provided for each additional turning lane up to a maximum width of 36 feet.

For major projects, the width of a one-way driveway entrance shall range between 16 and 20 feet.

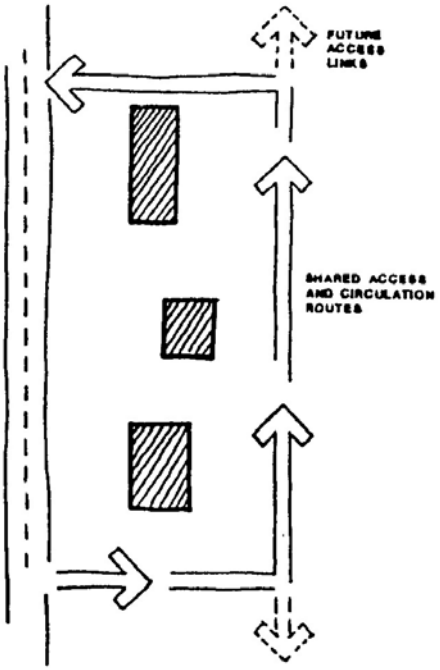
For major projects, curb return radii on driveways shall be designed for an Su-30 vehicle in order to accommodate turning movements for the most frequent delivery vehicles.

On Site Circulation

General

For all projects, site layout and design must ensure that automobiles and delivery vehicles will not back out into the highway.

For all projects, on-site circulation roads and parking aisles shall be 24 feet wide for two-way operation, and between 12 and 16 feet wide for one-way operation with 10 to 12 feet allowed for each additional lane where necessary.



For all projects, traffic control and directional signs on-site shall use standard symbols and colors (legends) on their design. (Reference: Federal Highway Administration, Manual on Uniform Traffic Control Devices, U.S. Dept. of Transportation, 1984).

For all projects, shared circulation routes shall be encouraged wherever feasible. In general, shared circulation roads are encouraged to be located behind the buildings rather than in front.

For all projects, provision for circulation connections to future projects on adjacent properties shall be encouraged wherever feasible.

Where curbs are used, granite or cement concrete (extruded or precast) materials are recommended. Asphalt curbs are heavily damaged by snow removal operations and are not encouraged.

Major Non-Residential Projects

For major non-residential projects, parking areas and driveways shall be surfaced with bituminous concrete or other acceptable hard and dust-free material. The reviewing authorities may, however, modify this requirement to permit some proportion of permeable surface, where groundwater recharge is of demonstrated concern.

For major non-residential projects, the circulation pattern shall include a route for an uninterrupted flow of traffic around the parking areas.

For major non-residential projects, the site design shall delineate a clear route for delivery vehicles, with appropriate geometric design to allow turning and backing for WB-40 vehicles. Signage or lane markings indicating that route may be required.

For major non-residential projects, the use of lane markings, which provide additional information to the driver regarding turning movements and pedestrian crossings, may be required. Maintenance of these markings is essential.

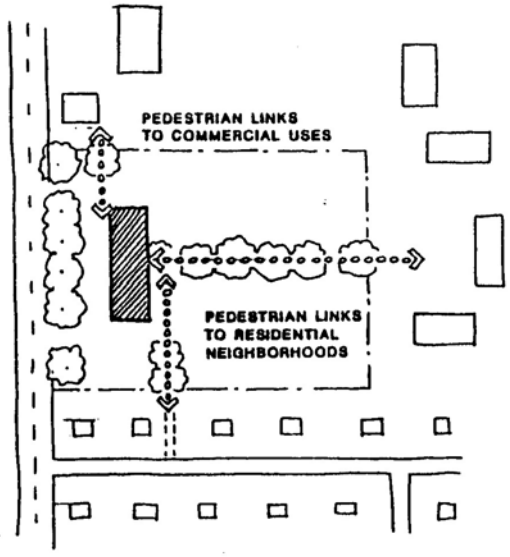
Where appropriate and feasible, shared circulation roads for major non-residential projects shall be located between 150 and 300 feet from the main highway in order to avoid intersection conflicts.

Pedestrian Access

General

Pedestrian ways shall be safely separated from vehicular traffic.

Handicapped ramps at a maximum slope of 12:1 must be provided at all pedestrian crosswalks and building entrance sidewalks. Median dividers and traffic islands shall provide openings for handicapped access where appropriate.



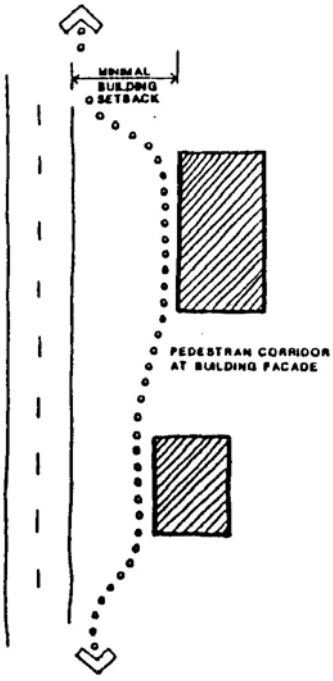
Major Non-Residential

For major non-residential projects, pedestrian and vehicular crossings shall be clearly marked, using signage, curbs, pavement striping and/or special paving materials.

For major non-residential projects, vertical curbs are recommended to delineate pedestrian ways and vehicular traffic.

For major non-residential projects, pedestrian ways shall link the development to abutting commercial or residential sites where .applicable. Pedestrian ways parallel to the roadway may be located either at the roadway edge, or along the building facade, provided the building setback is not greater than 60 to 80 feet from the street edge. Pedestrian ways shall extend to the property edge and must be laid out in consideration of the location of abutting sidewalks. Building design may include rear door entries or other means to facilitate pedestrian access from the back of the site to the front.

On-Site Walkways

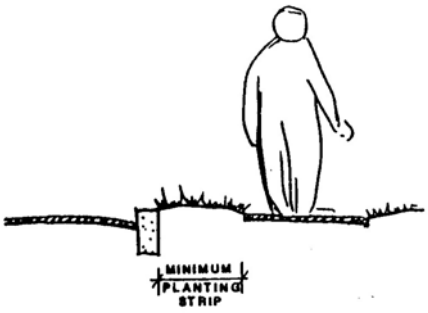


General

On-site walkways shall range from 4-feet to 6-feet in width. In Urban Neighborhoods where pedestrian traffic is heavy, an 8 to 10-foot wide walkway may be appropriate, to be determined on an individual case basis.

Planting strips between a walkway and a traveled way or a parking area shall not be less than two (2) feet.

Walkways shall be separated from the highway shoulder by curbs, intervening vegetation and/or swales.



Walkways may be combined with bikeways, especially along the edge of the highway and between major non-residential and residential projects, and abutting uses.

ENVIRONMENTAL AND MUNICIPAL PLANNING

Traffic Impacts

Major Projects

All major projects shall be designed to maintain Level of Service C (rural areas) or D (Urban and Suburban areas) during peak hours at nearby affected intersections and driveways. Where not possible, mitigation measures shall be implemented and may include the following:

- traffic improvements such as pavement widening, turning lanes, and signalization;
- incentives for alternative transportation modes such as bus amenities, bicycle paths and racks, and pedestrian links for all non-residential projects; and bus,: passes, ride sharing, van pools and showers for office and industrial projects;
- mixed use programs (office, retail, hotel, entertainment, and/or residential uses) which allow for shared parking and staggered work hours, and which generate traffic at different times throughout the day rather than in a single peak.

Stormwater Management

General

Surfaces on-site shall be designed for positive flow of drainage. Run-off shall be directed towards swales, catch basins or other drain structures.

Surface water run-off shall be detained, retained or infiltrated on-site to the degree necessary. The rate of flow of stormwater from the developed site shall not exceed the rate of outflow of stormwater from the site prior to the undertaking of the development. The stormwater system shall be designed for a 25-year return period storm of 24-hour duration.

If it is not possible to detain water on-site, downstream improvements to the channel may be required of the applicant to prevent flooding caused by the project. The natural state of watercourses, swales, floodways, or rights-of-way shall be maintained as nearly as possible.

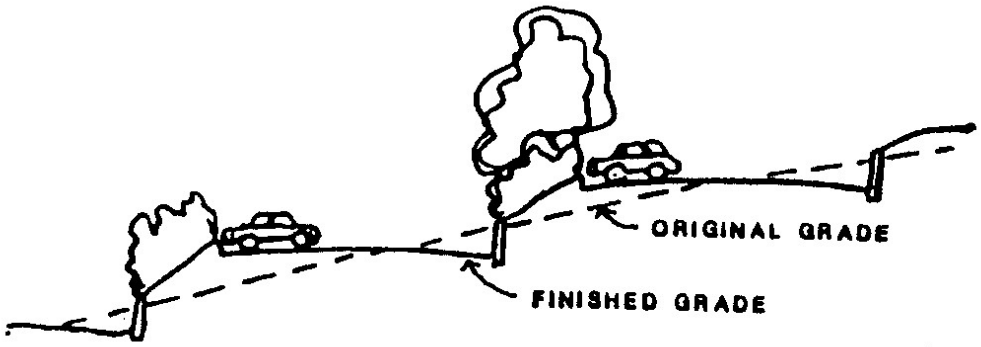
The biological and chemical properties of the receiving waters shall not be unreasonably degraded by the stormwater runoff from the development site. The use of oil and grease traps in manholes, the use of on-site vegetated waterways, and the reduction in use of de-icing salts and fertilizers may be required, especially where the development stormwater discharges into a gravel aquifer area or other water supply source.

Natural drainage ways on the site shall be maintained in their natural state wherever possible. Development layout shall account for this, and incorporate these natural water courses into the site design wherever possible, in order to avoid the need for culverts, pipe systems, and concrete channels on site. The filling of wetlands on-site shall be avoided. Where filling is necessary, the replacement of wetlands and wetland functions (storm damage prevention, flood control, groundwater recharge, filtering of pollutants, protection of fisheries and wildlife habitat) on other parts of the site may be required.

Erosion Control

General

For all projects, building designs and street layouts shall fit and utilize existing topography and desirable natural surroundings to the fullest extent possible. Filling, excavation and earth moving activity shall be kept to a minimum. Parking lots on sloped areas shall be terraced to avoid undue cuts and fills, and the need for retaining walls. Natural vegetation shall be preserved and protected wherever possible.



During construction, soil erosion and sedimentation of watercourses and waterbodies shall be minimized by employing the following practices:

- The area disturbed by stripping of vegetation, soil removal, and regarding shall be limited in a real extent at any time.
- The duration of exposure of the disturbed area shall be kept to a practical minimum.
- Permanent soil erosion measures for all slopes, channels, or disturbed land area shall be completed within 15 calendar days after final grading has been completed.
- When it is not possible to permanently stabilize disturbed land, temporary soil erosion control measures (plants, seeding.' and/or mulch) shall be implemented within 30 calendar days of exposure of the soil.
- Until a disturbed area is stabilized, sediment in run-off shall be trapped by the use of debris basins, sediment basins, silt traps, or other acceptable methods.
- Temporary or permanent water-courses traversing, bordering, or leaving the site shall be designed to limit the waterflow to a non-erosive velocity.
- Storage of fill materials within 50 feet of the banks of any stream, intermittent or perennial, or water body shall not be allowed.
- The top of a cut or the bottom of a fill shall not be closer than ten feet from a property line.
- Removal of topsoil from any lot will not be allowed, except for that removed from areas to be occupied by buildings, paving or other surfaces that will not be re-vegetated, or unless in conformance with the performance standards set forth in Article XI of the land use code.

Water Supp1y, Sewage Disposal and Ground Water

General

The expected water requirements for the project shall be provided to reviewing authorities.
The applicant shall demonstrate that adequate provision for securing and maintaining a sufficient and healthful water supply has been made, by submitting evidence from the public works department or from a geologist or local well-driller.

The expected daily volumes of sewage, the expected contents of sewage effluent, and the method for disposal shall be provided, both for ultimate development levels and for all phases prior to completion of project.

Where the municipal sewer system will be utilized, the present and the authorized capacity of the sew-age treatment plant, according to the City Engineer, will be provided.

If water supply and sewage disposal are both to be handled on-site, then separation distances between wells and sewage disposal areas shall be at least the minimum distance established in the State of Maine Plumbing Code.

On-site sewage treatment plants shall be subject to compliance with Maine Plumbing Codes, and proper maintenance of facilities shall be ensured by the applicant.

If connections will be made to municipal sewer and/or water systems, the diameter, materials, depths of cover, water gates and meters (if appropriate), and sewer manholes and pumping stations (if appropriate) for all connections shall be in compliance with all applicable state and municipal regulations, and shall be indicated on the submitted plans.

The proposed site development and use shall not adversely impact either the quality or quantity of ground water available to abutting properties.

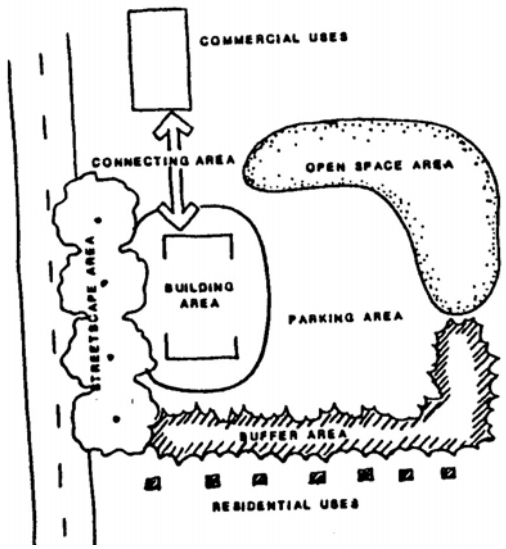
Projects involving common on-site water supply and sewage disposal systems with a capacity of 2,000 gallons per day or greater shall demonstrate that the ground water at the property line will comply, following development, with the standards for safe drinking water as established by the State of Maine.

The development shall not impose an unreasonable burden on existing municipal water supply and/or sewage disposal systems. Where adverse impacts will result, the City may require mitigation measures such as impact fees and/or system improvements.

LANDSCAPE ARCHITECTURE

There are distinct areas on a development site which should be considered in the landscaping design:

- Streetscape area
- Building area
- Parking areas
- Buffer areas (side or rear)
- Connecting areas between developments (side or rear)
- Open space areas



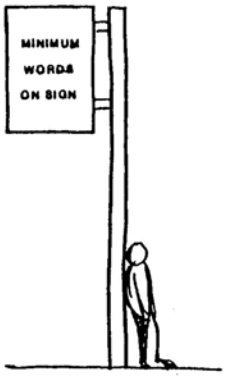
The landscaping of each area has different performance criteria and thus should take on distinct characteristics as defined by the use of plantings, grading, paving materials, site structures and furnishings, lighting, and signage. It is often not enough, however, to merely install landscape items; proper care and maintenance of these environments also are necessary.

General Provisions

All existing vegetation on the site shall be considered in the design of the site and retained to the extent possible, especially in buffer areas and open space areas. Special effort shall be made to retain trees with a diameter greater than six (6) inches. Preservation of existing planting reduces the need for new materials, buffers views to and from adjacent sites and uses, and assists in maintaining a human scale on the site.

Where required plant materials do not survive or do not provide the screening required by the Guidelines (Streetscape area, Parking area and Buffer area), they shall be replaced where necessary or be supplemented with additional plantings to provide the necessary screening within one year of their original planting.

Signs should be kept simple and direct in their message. Simple geometric shapes are recommended with color schemes limited to two or three contrasting colors. In order to deliver a clear message, a single panel should be used with a minimum of words (approximately 30 letters is suggested). Symbols and graphic logos are easy for motorists to recognize and should be-



considered in the sign's design.

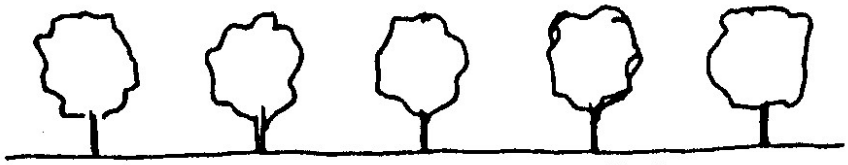
Sign illumination should be either from inside the sign or from concealed ground spotlights.

Signs should be set as low as possible to the ground. Landscaping can be used to frame and highlight the sign, and might include shrubs, trees, and earth mounds.

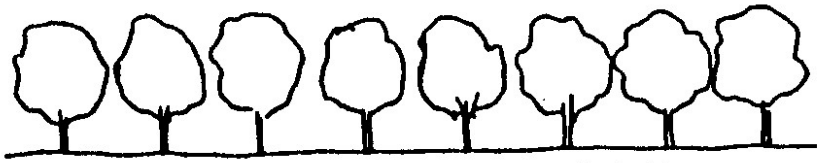
Streetscape Area

General

For all projects, street trees shall be planted at intervals of 30 to 50 feet on center, shall have a minimum of 2.5 inch caliper, and shall be at least 14 feet high at the time of planting. Alternatively, existing trees may be preserved where they are judged to be of sufficient quality, but this will require care in site planning and in site preparation.



STREET TREES 50-FOOT SPACING



STREET TREES 30-FOOT SPACING

Trees should be sited so that future root and canopy growth will not interfere with utilities above and below ground, and streets and sidewalks. In general, trees should be set a minimum distance from the street equal to 1/2 of the width of the mature crown.

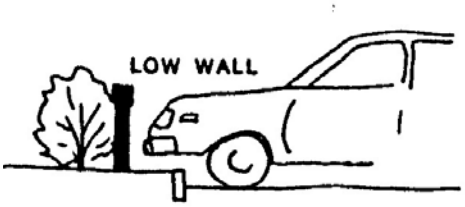
Deciduous trees are recommended for street planting because they allow views from the highway into the zone of the building, minimize sight distance obstructions along the highway, and provide an overhead canopy that creates a unifying image along the street. Flowering ornamental trees such as crabs generally should not be used for street tree planting because they are of too small a scale to provide an effective canopy. (See Appendix for recommended species.)

For all projects, the street edge must be curbed to protect pedestrians and to maintain the integrity of the landscaped areas which separate street traffic from on-site vehicles. In rural areas, a vegetated swale may replace the curb where space permits.

Where municipal lighting exists along the street, additional low level lighting for pedestrians is optional, and may consist of bollard lighting or overhead lighting which is directed downward or away from adjacent residential areas.

Site entrances and driveways may be accented with formal planting arrangements, provided that site distances from driveways and along the highway are not obstructed.

Walls may be used to screen the ground level of the automobiles in the parking lots. These walls shall be a maximum of 24 inches high, and shall be finished with brick, stone, wood or concrete that is compatible with materials on adjacent buildings.



Street furnishing and pedestrian amenities shall be encouraged, including benches, bus shelters, waste receptacles, and water fountains.

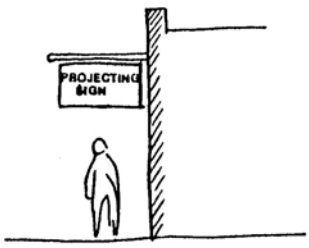
Urban Neighborhoods

In Urban Neighborhoods, the Streetscape area is usually synonymous with the Building area. Where building setbacks are less than ten (10) feet, the Streetscape area may consist of a paved walkway with street trees along its length. Where building setbacks are between 10 and 30 feet, the Streetscape shall include a walkway and landscaped area.

For Urban Neighborhoods, a single consolidated sign shall be allowed and may be placed in either the Streetscape area or the Building area, but not both. The sign may be either free-standing, projecting from, or flat on a building facade. In general, these signs should be designed for the pedestrian and for slow moving traffic (15 to 30 mph).

Signs attached to a building may not extend above the roof line.

Signs projecting from a building facade may not extend more than four (4) to six (6) feet, from the building and must allow for an eight foot clearance below the sign panel for pedestrian traffic.



Free-standing signs must be set back 10 to 16 feet from the street edge, depending upon building setback and width of the planting strip.

Signs shall be fabricated with durable, weather-protected materials and finishes.

Suburban Strip and Rural Areas

For Suburban Strip and Rural areas, where a parking lot might be placed in the front of the lot, a border strip is required to clearly delineate the zone of the street from that of the parking area (see Table 1, "Building Setback to Border Strip Proportions"). A pedestrian walkway and/or bikeway may be included in the width of the border strip, but the majority of the border strip area should be vegetated with either natural or planted trees

and other vegetation. Sight distances, however, must not be obstructed by plantings or related features at intersections of two or more public streets, at driveway entrances, or along curves in the public right-of-way.

In Suburban Strip and Rural areas, a single consolidated sign may be located in the streetscape area. The sign shall be fabricated with durable, weather-protected materials and finishes.

In Suburban Strip areas and Rural areas, one directional sign may be provided at each entrance drive to signal one-way traffic circulation (entry/exit), and/or service vehicle entrances. These signs shall be visually unobtrusive, no more than two (2) square feet in area, and no higher than four (4) feet from the ground. They shall be placed at a sufficient distance to warn the driver before turning.

Building Area

General

For all projects, parking areas shall be separated from the building by at least 5 to 10 feet. Plantings are recommended along the building edge, particularly where foundations are exposed or where building facades consist of long unbroken or bland walls. Such plantings will improve the pedestrian environment and provide a transition between the building walls and the ground.

Building facades may be illuminated with soft lighting of low intensity that does not draw inordinate attention to the building. The light source of the building facade illumination shall be concealed.

Building entrances may be illuminated using recessed lighting in overhangs and soffets, or by use of spotlighting focused on the building entrances with the light source concealed (e.g., in landscaped areas). Direct lighting of limited exterior building areas is permitted when necessary for security purposes.

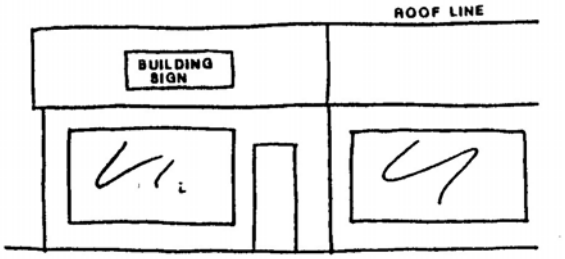
At building entrance areas and at drop off areas, site furnishings such as benches and sitting walls shall be encouraged. Additional plantings may be desirable at these points to identify the building entrance and to complement the pedestrian activity in this zone.

Urban Neighborhoods

Guidelines for signage in the Building area are synonymous with signage in the Streetscape Area, and are discussed previously under "Landscape Architecture - Streetscape Area".

Suburban Strip and Rural Areas

In Suburban Strip areas and Rural areas, each business entity may have a single sign attached flat to the face of the building.



In no case shall the sign project above the roof line of the building.

Signs shall be fabricated with durable, weather-protected materials and finishes.

Parking Area

General

Lighting in parking areas shall be provided by more frequent, lower intensity lights, set on shorter poles. Lighting shall be directed downward or angled so as to reduce glare towards adjacent residential neighborhoods and the highway.

For all residential projects, the location and the design of parking spaces shall be disaggregated to the degree possible to facilitate access to individual units, and to break the expanse of paved areas on site. Lots with no more than 10 to 12 cars are recommended.

Major Projects

For major projects, parking areas shall be visually broken up by the use of trees and landscaped parking islands; the use of hedges, grade differences and low walls may be used to further reinforce the spatial separation of parking areas.

A minimum of one tree per 12 to 16 parking spaces (8 to 10 trees per acre) shall be provided in each parking area, within the confines of the perimeter curb or pavement edge. Trees may be planted in informal groups, straight rows, or irregular rows as space permits, or may be concentrated in certain areas. Trees shall have a caliper of 2.5 inches at the time of planting. Parking and traffic islands shall be curbed to better direct traffic, and to protect both the pedestrians and the landscaping. The islands shall be strategically located to assist the pedestrian in crossing the parking area.

A wider parking island, placed every other row of cars, is preferred over narrower islands placed every row. In general, there shall be some substantial planting along the length of a parking row every 100 to 150 feet.

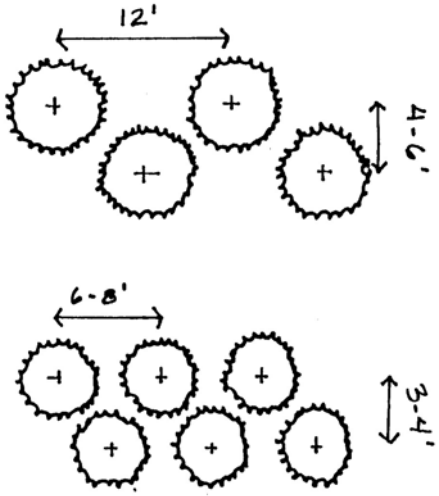
Parking islands shall be a minimum of ten (10) feet wide. The minimum distance from tree to curb shall be five (5) feet.

Included within the width of the parking islands may be paved walkways, lawn, or ground cover. Paved surfaces within the parking islands shall be minimized, however; recommended sidewalk widths are four (4) feet.

Landscaped islands and traffic medians with curbs are recommended to define the main site entrance drive from adjacent parking areas.

Buffer Area

General



All trash receptacles and storage areas shall be screened by opaque fencing, site walls and/or dense evergreen landscaping.

Evergreen screening shall be effective to a minimum height of four (4) feet at installation, and six (6) to eight (8) feet at maturity. Two staggered rows of plantings spaced twelve (12) feet on center shall be provided to accomplish the required buffering.

If field plantings are used in lieu of nursery-type plantings, two staggered rows should be placed six (6) to eight (8) feet on center based on their fullness.

Site walls and fences used for screening shall be six (6) to eight (8) feet high, opaque, and finished with wood, concrete or stone.

Gateways or breaks in the walls, fences and/or landscape screens shall be provided for pedestrian access where appropriate between abutting non-residential and residential land uses.

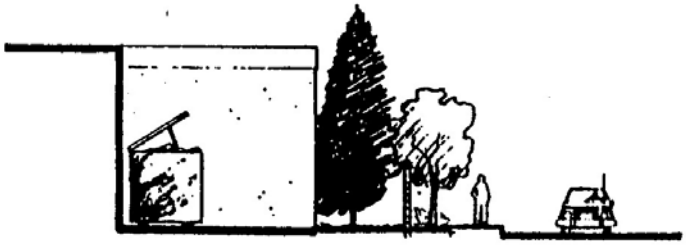
Buffer landscaping, including earth berms, low walls, and dense plantings, may also be used within the project site area to screen parking areas, service lanes, and loading docks from sensitive sites within the property.

Natural topographic variation and existing vegetation may also be used effectively to screen certain uses and to shelter development from adjacent properties. Where site conditions allow, the reviewing authorities may allow natural topographic screening and existing vegetation to replace a part or all of the required screening.
Non-Residential Projects

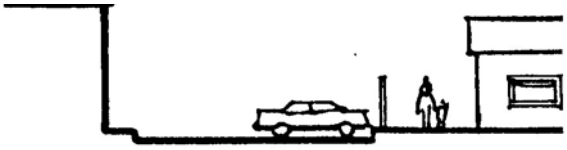
The city shall encourage maximum buffer widths between any non-residential site development work (buildings, pavement, and other accessory uses) and abutting residential land uses.

The preferred buffer shall be a vegetated buffer of at least 100 feet in width, which may include existing woodland supplemented by lower deciduous shrubs or evergreen plantings for screening purposes.

Where a narrower vegetated buffer is unavoidable (20 to 100 feet wide), landscaped earth berms shall be used to provide maximum screening. The berms shall be located as close as possible to site development work. The berms shall be graded with slopes of 1:3 to 1:4, and shall be at least two (2) to four (4) feet high. The crest of the berm shall be planted with evergreens, and the side slopes planted with deciduous and/or evergreen plants.



Where site development work within 20 feet of the lot line is unavoidable, maximum screening shall be achieved by dense evergreens planted close to the building and/or edge or pavement. In some cases, the reviewing authorities may also require a site wall to further screen development (such as loading docks or storage areas). This wall shall be 10 to 12 feet from the building wall or parking area, and shall be further screened with deciduous and/or evergreen landscaping on the side facing away from the site development.



On some lots in the Highway Business and Community Business Zoning Districts, where the only possible or practical location for proposed parking areas or access ways is within the normal required ten (10) foot side or rear yard, the reviewing authority - Planning Board for major projects; Development Review Committee for minor projects-may lessen buffering requirements to accommodate the project while still maintaining sufficient screening of abutting properties. Similarly, on lots where existing nonconforming uses of land, buildings, or structures may preclude the establishment of preferred buffers, or in zoning districts where no yards are required, reduction of buffering may also be permitted by the reviewing authority. However, sufficient screening of abutting properties must be maintained in order to protect them from adverse impacts of the development. The level and type of screening necessary for these situations should be determined on a discretionary, case-by-case basis, utilizing criteria that may include, by way of example, the following:

1. The compatibility of the abutting properties; for example, the level of screening necessary to buffer a parking lot accessory to a non-residential use from a parking lot accessory to a multi-family dwelling will not have to be as great as the screening necessary to buffer a non-residential building from an abutting single-family dwelling;

2. Existing site characteristics; Existing topography, vegetation, and man-made features can affect the type and level of screening necessary to accomplish proper buffering;

3. Life-safety issues; Screening should minimize interference with fire escapes, exits, etc., or the ability of public safety services to reach or service the property or adjacent properties;

4. Access to sunlight or scenic views; Screening should not significantly block sunlight to adjacent buildings or obliterate scenic views that exist for neighboring properties; and

5. Types of buffering/landscaping; Screening may be accomplished by dense evergreen plantings, deciduous tress and shrubs, fences, walls, berms or a combination of the same.

For bufferstrips 3 to 7.5 feet in width, and where maximum screening is required, evergreen hedges may be used. These hedges shall be a minimum of 4 feet at installation and shall be planted 4 to 5 feet on center and should, at maturity, be maintained at a minimum height of 6 feet. Recommended species include: False Cypress (Chamaecypuris lawsoniana); Eastern Arborvitae (Thuju occidentalis); and Canadian Hemlock (Tsuga canadensis).

For bufferstrips less than 3 feet in width, and where maximum screening is required, the type of screening shall be opaque, wood fencing, 8 feet high, with the finished side facing away from the site development.

In cases where additional screening height is necessary, plantings of deciduous trees may also be required. Trees planted in conjunction with fencing should be planted at intervals of 20 to 30 feet on center and shall have a minimum caliper of 2 1/2 inches.

Recommended species include: Yellowwood (Cladrastis lutea); Honeylocust (Glenditsia triacanthos); and Bradford Pear (Pyrus calleryana).

Reduced bufferstrips should be protected by raised planting beds, curbing, or wheel guards to prevent damage from vehicular traffic.

Connecting Area

The purpose of the Connecting Area is to provide visual and access continuity between adjacent Non-Residential projects, such as commercial retail, office and light industrial uses, and between adjacent Residential projects.

The use of predominantly deciduous trees in these areas is recommended to allow partial views to and from adjacent uses and destinations.

Pedestrian links are most important and may be signaled with formal plantings such as a tree lined corridor. In other cases, a winding path may be sited between informal plantings or through areas of existing woodlands which have been preserved.

The use of all weather surfaces is recommended to allow for joint use of pathways by pedestrians and bicyclists.

Pedestrian lighting for safety along these paths shall be encouraged.

Open Space Areas

Open Space areas shall be encouraged wherever possible on the site.

The Open Space areas may retain the natural vegetation, or new plantings and lawn areas may be introduced for active or passive recreation.

Cluster Developments

When developing a cluster subdivision off the extension of an existing public street, care must be taken in the design to create an orderly transition from established single-family neighborhoods to the clustered development.

A number of techniques and design elements can be used to make the transition into the clustered development less abrupt. Among these techniques and design elements are:

1. Use of curvilinear streets;
2. Choice of buffer landscaping, including earth berms, low walls and dense plantings, to be utilized in the required fifty (50) foot setback area along the extension of the existing street;
3. Taking advantage of natural topographic variation to help mitigate the transition;
4. Incorporating other open space area into the transition area to provide additional buffering and setback.

APPENDIX
RECOMMENDED STREET TREE PLANTINGS

BOTANICAL NAME : Acer DlatanQides
COMMON NAME: Norway Maple
Zone 3, 40-50' in height, usually spread is 2/3's or equal to height.. Well adapted to extreme soils, will withstand sand, clay, acid to calcureous soils, seems to withstand hot, dry conditions, tolerates polluted atmosphere. Golden fall foliage.
Cultivars:
'Summershade' - rapid growing and upright-oval habit 'Superform' - rapid growing with straight trunk 'Emerald Queen' - rapid growing

BOTANICAL NAME : Acer rubrun
COMMON NAME: Red Maple
Zone 3, 40-60' in height, spread less than or equal to height. Very tolerant of soils, however, prefers slightly acid, moist conditions.
Cultivars:
'Armstrong' - Narrow Spirelike Crown

BOTANICAL NAME : Acer saccharum
COMMON NAME: Sugar Maple
Zone 3, 60 - 75' in height. Spread is 2/3's or equal to the height. Prefers well drained moderately moist, fertile soil, a slightly acid soil seems to result in greater growth, not extremely air pollution tolerant. Needs ample, unrestricted space to grow.
Cultivers:
'Green mountain' - Upright oval crown, performs better than species in dry restricted growing areas.

BOTANICAL NAME : Cladrastis lutes
COMMON NAME: Yellowwood
Zone 3, 30 - 50' in height with a spread of 40 to 50 feet. Tolerates high pH soils as well as acid situations. Requires well drained soils. Fragrant white flowers in spring. Bright yellow foliage in spring gradually change to bright green in summer and yellow in fall.

BOTANICAL NAME : Fraxinus americana
COMMON NAME: White ash
Zone 3, 50 - 80' in height with a spread of similar proportions. Prefers deep, moist, well drained soils but also withstands soils which are not excessively dry and rocky.

BOTANICAL NAME : Fraxinus pennsylvanica
COMMON NAME: Green ash
Zone 3, 50 - 60' in height by about 1/2 that in spread. Very adaptable tolerates high pH, salt, drought, and sterile soils.
Cultivars:
`Honeyshade' - Glossy foliage
`Marshall's Seedless' - Vigorous growth with less insect problems than the species.

BOTANICAL NAME : Ginko biloba
COMMON NAME: Ginko
Zone 4, 50 - 80' in height, variable spread 30' plus. Prefers sandy, deep, moderately moist soil but grows in almost any situation. Air pollution tolerant; a durable tree for difficult to landscape situations. Extremely free of pest.

BOTANICAL NAME : Gleditsia triacanthos var. inermis
COMMON NAME: Thornless Honeylocust
Zone 4, 40 - 60' in height, with comparable spread. Prefers rich, moist soils of a limestone origin, however, it withstands a wide range of conditions including dry soils,' high pH and salt spray.
Cultivars:
'Fairview' - Rapid grower; strong sturdy habit of growth; wide upright.
`Shade master' - tall straight trunk with graceful arching branches.

BOTANICAL NAME : phellondendron amurense
COMMON NAME: Amur Corktree
Zone 3, 30 - 45' in height with equal spread. Does well on many types of soils, withstands acid or alkaline conditions.
Cultivars:
`Red spire' - Compact upright form; hardiest. `Autumn Blaze' - Wider than Redspire

BOTANICAL NAME : Pyrus calleryana `bradf.ord'
COMMON NAME: Bradford Callery Pear
Zone 4, 30 - 50' in height with a 20 - 35' spread. Adaptable to many different soils, tolerates dryness and pollution. Glossy foliage, turns scarlet in fall.

BOTANICAL NAME : Sophora iaponica
COMMON NAME: Japanese Pagoda tree
Zone 4, 50 - 75' in height with comparable spread. Prefers loamy well-drained soil. White mildly fragrant blossoms in spring.
Cultivars:
`Fastigrata' - Upright growth habit. `Regent' - Fast growth rate.

BOTANICAL NAME : Tilia cordata
COMMON NAME: Little Leaf Linden
Zone 3, 60 - 70' in height and 1/2 to 2/3's that in spread. Prefers moist, well drained soil, pH adaptable and pollution tolerant. Dark glossy green foliage changing to yellow in fall. Upright - oval and densely branched habit.