Public Realm Guidelines

The following are the proposed guidelines, standards, or specifications for public realm amenities, streetscape, and furnishings for the Town Center area. The application of the standards should bring cohesion and continuity to the Town Center area, not found at present, and assist with creating a pedestrian friendly environment. Street furnishings, such as those described below, promote both pedestrianism and the overall aesthetic in downtown. The design, location and maintenance of the street furnishings should complement the architectural style of the community, which in, in turn, gives the downtown a distinctive identity. The intended areas for their application are the defined commercial and residential redevelopment areas found on the map at the front of this document. There are certain elements of the streetscape not covered, including paving of streets and vehicular oriented lighting. It is assumed that the existing materials and fixture elements associated with these two components, relatively cohesive within the Town Center at this time, would be applied universally. Additionally, further elements will be introduced later with the advent of new public transit service. (i.e. bus shelters).

Benches

Pedestrian friendly environments require places for people to sit: low walls, wide steps and well-designed and situated benches. Street furniture, including benches, will be provided throughout the Town Center along pedestrian thoroughfares and within public outdoor spaces in a way to encourage interaction and street life.

It is important that the benches be sensitively integrated into the fabric of the community. While they should be similar in design and color with one another and other furnishings, their individual size and mounting features may differ based upon location, available space, and base surface. The actual bench design should emphasize:

- Comfort,
- Simplicity of form and detail,
- Ease of maintenance,
- Durability of finish, and
- Resistance to vandalism.

The following specifications are based on several factors including compatibility with existing furnishings and citizens' input and preferences. They are, however, flexible and subject to change based upon a number of factors such as cost, availability, maintenance needs and suitability in specific locations.

Bench specifications

Standard size of 4, 6 and 8 feet. Metal one-piece units with armrests and contoured backs.

Stationary, surface mount with leveling capacity. All mounting hardware and fasteners should be low profile, vandal resistant and finished to match unit. Color: mar-resistant black gloss finish.

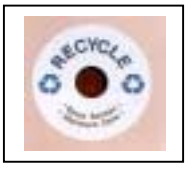
Trash Receptacles

Trash receptacles are essential for a clean street. They silently remind people that trash belongs in the bin, not on the street. New trash receptacles will be located throughout the Town Center in conjunction with other furnishings. While individual sizes may vary due to location and anticipated usage, they should share a common design and color with other furnishings.

Victor Stanley, Model S-42, with optional stainless steel ashtray, 36 gallon, $698.

Receptacle specifications

Metal containers featuring an inlaid metal ashtray and removable inner liner. Standards capacities ranging from 24 to 36 gallons. Vertical bar design with mar-resistant black finish. Units should feature anchoring and leveling mechanisms.



The community also has the option of utilizing the receptacles for recycling purposes. The standard metal container can serve as recycling receptacles through the simple introduction of an

attached emblem or sign and the use of lids designed to accommodate paper, plastic, cans, bottles, etc.

Bike Racks

The Cary Town Center Plan calls for the development of a multi-modal transportation system including, vehicular, pedestrian, bicyclist and public transit. Future design will include highly connected pedestrian and bicycle pathway networks complete with pedestrian/bicycle facilities.

Bicycle racks will be provided at a variety of public destinations such as schools, libraries, places of worship, post offices, transit stops, shopping and employment areas. The size and holding capacities will vary according to location – their placement must allow adequate clearance space within the public right-of-way. While their sizes may vary, they should be similar in design and color (black) with other street furnishings.

Bike rack specifications

Stationary bicycle racks, which utilize either in ground or bolt down installation. Bolt down racks should utilize vandal resistant fasteners or devices.

Steel construction with a mar-resistant black finish.

Standard sizes (catering from 3 to 13 bicycles) measure from 14 inches to 134 inches in length and 30 inches high. The racks should be designed for moderate security and be able to accommodate U-shaped locks.

Planters

Landscape features and street furnishings may include the use of planters at selected locations. The planters will add variation to the streets and allow the seasonal display of flowers and plants. The preferred type of planters is a round pre-cast “stone look” unit. It should be noted that attractive planters require regular maintenance. The installation of planters should be premised on the availability of regular maintenance.

Planter specifications

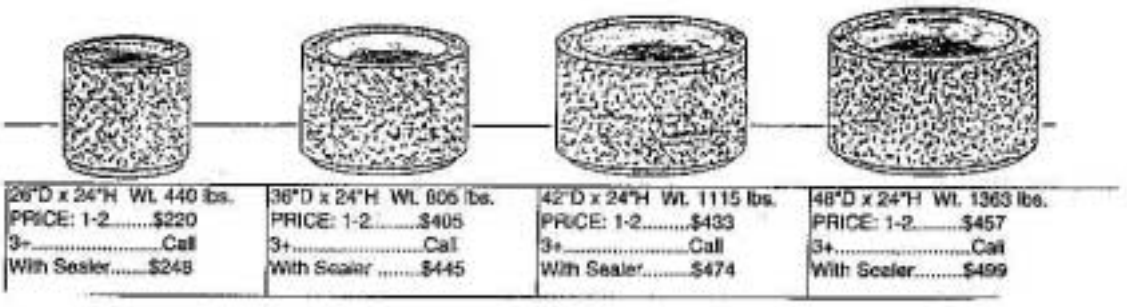
Round pre-cast concrete planters with a minimum compressive strength of 5,000 psi. Alternative material includes more lightweight cast stone planters such as glass fiber reinforced concrete units.

Standard diameters of 18”, 26”, 36”, 42”, 48” and possibly 60”.
Standard heights of 17/18”, 24”, 30” and 36”

Color: tan blend, sand tan or light brown. Optional features: Pre-drilled drain holes for drainage should be provided. Sealers of acrylic (gloss) or non-gloss clear.

Pre-cast concrete planters of 36” 42” & 48” diameters.
Approximate weight:
36”D x 24”H, 800 lbs.
42”D x 24”H, 1100 lbs
48”D x 24”H, 1350 lbs.

Example Planter Pricing, Doty and Sons, 2002



26"D x 24"H Wt. 440 lbs.	36"D x 24"H Wt. 605 lbs.	42"D x 24"H Wt. 1115 lbs.	48"D x 24"H Wt. 1363 lbs.
PRICE: 1-2.....$220	PRICE: 1-2.....$405	PRICE: 1-2.....$433	PRICE: 1-2.....$457
3+.....Call	3+.....Call	3+.....Call	3+.....Call
With Sealer.....$248	With Sealer $445	With Sealer.....$474	With Sealer.....$499

Bollards

The use of bollards to direct traffic dates back to the 17th century. Some of the earliest bollards were recycled English cannon barrels. New bollards within the Town Center should be of traditional design and compatible with other furnishings. They should be:

- Tall enough to discourage vehicles.
- Small enough to be unobtrusive,
- Solid for durability and stability, and
- Slim in appearance to complement their surroundings.

Bollard specifications

Metal cast (iron or aluminum) with a black finish. Style: traditional, sculptured.
Size: Standard height of 24 to 48 inches. Base diameter of 6 to 15 inches.
Options: Some bollards to be equipped to accommodate chains (e.g. eye-bolts).
Installation requirements: To be permanently installed by either surface mount or embedded. Please note that bollards may be made removable through the introduction of an in-ground sleeve or receiver.

Tree Guards & Grates

The Town Center Area Plan recommends "To the extent possible all streets should have trees." Trees will be located within planting strips separating the sidewalk from the roadway as well as within paved pedestrian areas such as sidewalks, plazas, etc. Tree guards may be utilized to protect young trees in certain areas and grates may be employed for some trees located entirely within paved areas.

Tree guards offer an aesthetic means of protecting and supporting trees. They may or may not be used in conjunction with grates.

Tree guards within the Town Center should be of simple and functional design with horizontal metal bars similar in design and color to benches and receptacles. For greater pedestrian safety guards with rounded or smooth tops should be utilized. The guard farthest to the left would be inappropriate for an area such as a playground. The guards should be fabricated in halves and bolted together for easy assembly and installation.

Tree guard specifications

All steel construction fabricated in halves for installation. Horizontal steel bar design with black finish to match other furnishings. Size: standard of 60 inches to 66 inches, interior diameter of 12 to 16 inches. Guards to be secured to grates when used in conjunction with grates. Otherwise they are secured in-ground. It is recommended that the planting area for trees located within pedestrian thoroughfares or gathering places with a minimum sidewalk of six feet in width be protected by pavement or tree grates. Tree grates are available in a wide variety of shapes (round, rectangular, octagon, etc.) and designs. Some are fairly simple in design while others are highly decorative. The minimum recommended specifications for tree grates are:

- They should be made of either cast iron or pre-cast concrete to prevent corrosion,
- The pattern design should protect against foot/pedestrian traffic and debris yet allow water to flow to the root system,
- All grates should be expandable to accommodate growth, and
- The grates should be ADA compliant.

Landscaping

Street trees and other plantings serve a number of functions: air filters, shade and spatial enclosure while they also add beauty and character to the community. The level of benefit derived from attractive trees and vegetation is directly related to the care taken in selecting, installing and maintaining the plants. The initial investment in careful planting design is paid back with much improved performance levels and lowered maintenance requirements.

Approaches exist for the design of tree planting spaces that are sensitive to the long-term needs of the trees while also reducing the chances of root damage to pavement and utilities. These approaches are recommended. Adequate access to water for irrigating landscaping must be provided. Demand for irrigation water warrants installation of hose bibs and often requires the provision of a full in-ground irrigation system.

For both aesthetic and practical reasons it is advisable to plant a diversity of trees within the landscape. Not only are different trees more appropriate for different locations but a good diversity with help guard against possible future widespread problems due to insects, diseases, or changing environmental conditions. The recommended trees vary in size and will be appropriate for different locations. A large tree has a design intent of attaining a height greater than 35 feet and/or a DBH of 9” or greater within the expected design life of the associated streetscape (20 years). A medium tree has a design intent to attain a height between 20 to 35 feet and/or a DBH greater than 6” but less than 9” within the expected design life of the associated streetscape. Small trees will attain a height not greater than 20 feet and/or a DBH less than 6” within the expected design life of the associated streetscape.

All trees shall be provided a rooting space and medium (soil) that are of sufficient size, fertility and physical characteristics so as to be conducive to development of a healthy root system that does not cause significant conflicts with infrastructure, pavement or streetscape elements. Ideally the growing medium shall contain approximately 30-50 percent total porosity and bulk density in the range of 1.2-1.4 Mg/m3. Growing medium exceeding 1.5Mg/m3 is considered to be highly adverse to healthy growth of the tree. The rooting space and medium shall be adequate to support healthy growth of the tree to the desired size and life span. The planting system shall promote the development of the tree’s normal tolerance and stability against weather conditions such as wind and freezing rain. Where there is significant risk of accumulation of standing water in the rooting space, subsurface drainage shall be provided in order to prevent drowning harm to the root system.

Typically each large tree should be provided a rooting space minimum of 300 square feet in area and 1.5 feet in depth. The planting pit should not be less than 8 feet wide in width or length. Typically each medium tree should be provided a rooting space minimum of 225 square feet in area and 1.5 feet in depth. The planting pit should not be less than 7 feet wide in width and length. Typically each small tree should be provided a rooting space minimum of 100 square feet in area and 1.5 feet in depth. The planting pit should not be less than 5 feet wide in width or length. Where attaining the desired amount of surface area is a problem, increasing the depth of the rooting space to provide an equivalent volume is an acceptable alternative.

Merging rooting spaces together is encouraged since such a merged space has been shown to be conducive to better growth in the associated trees. Situation specific reduction in the typical rooting space size is an option when spaces are merged.

The following recommended trees have aesthetic and physical characteristics that make them desirable candidates for use in the downtown center. With proper alignment of species to varying site conditions and reasonable maintenance, these trees should perform well. All are appropriate to the area as delineated by the USDA’s Hardiness Zone Map (Zone #7).

Tree Recommendations

- Crape Myrtle, Lagerstroemia indica
- Growth Rate: Rapid
- Site requirements: Sun, moist, well drained soil
- Texture: Medium
- Form: Multi-stemmed rounded crown, dense branching
- Height: 15 to 30 feet
- Width: 6 to 15 feet
- Leaf: 1 to 2.8 inch opposite to whorled, simple leaf; yellow, orange, red fall colors; white flowered trees produce yellow fall color
- Flowers/Fruit: Panicle of white, pink, red, purple flowers July to fall on new growth
- Other: Smooth to exfoliating bark. Mildew resistant, susceptible to Japanese beetles. Varieties vary considerably as to size and pest resistance. Mildew, aphid, Japanese beetle resistant varieties are recommended.

- Chinese elm, Lace bark elm, Ulmus parvifolia
- Growth Rate: Moderate to rapid
- Site requirements: Sun, moist, well drained soil but tolerates poor soil
- Texture: Medium to fine
- Form: Rounded top; pendulous branches
- Height: 40 to 50 feet
- Width: 40 to 50 feet
- Leaf: .7 to 2.5 alternate, simple leaves; yellowish to reddish purple fall color
- Flowers/Fruit: Not showy
- Other: Bark sheds leaving irregular spots of orange, gray, green, brown; tough durable tree, good street tree, resistant to Dutch Elm disease and air pollution. Selected as one of top ten performers in state by North Carolina Tree Evaluation Program, NC State University.

- European hornbeam; Carpinus betulus “Fastigiata”
- Growth Rate: Slow to moderate
- Site requirements: Sun to partial shade; tolerates a range of soil types but prefers moist well drained soil
- Texture: Medium to fine
- Form: Pyramidal when young; rounded at maturity
- Height: 40 to 60 feet
- Width: 30 to 40 feet
- Leaf: 2.5 to 5 inch alternate, simple, sharply serrated leaf; yellow to yellowish green fall color
- Flowers/Fruit: Male catkins, small nut
- Other: Dense shade, smooth, gray bark. Slower to establish after transplanting, requiring attention to not over or under watering. Very adaptable once started. Bagworms can be a problem. Recommended for urban landscapes by NC State University.

- Flowering Dogwood, Cornus florida
- Growth Rate: Slow to moderate
- Site requirements: Partial shade; moist well drained soil
- Texture: Medium
- Form: Semi-rounded top; horizontal low branches creating a layered look
- Height: 15 to 30 feet
- Width: 15 to 20 feet
- Leaf: 3 to 6 inch opposite, simple leaf; red to reddish purple fall color
- Flowers/Fruit: 4 inch white bracts in April; glossy red fruit in fall
- Other: Native; best form and performance in light shade and cooler conditions. Not adapted to hot or dry conditions. Stressed trees prone to borer beetle damage and leaf disfiguring diseases.

Additional Tree Planting Options

Below please find additional tree planting options, which are appropriate to the area and would add diversity to the community.

- Cornelain Cherry Dogwood, Cornus mas (to the right) ⇨
- Growth Rate: Moderate
- Site requirements: Sun to partial shade; range of soil types including heavy clay
- Texture: Medium
- Form: Multi-stemmed; oval rounded; dense network of fine stems; usually branched to the ground
- Height: 20 to 25 feet
- Width: 15 to 20 feet
- Leaf: 2 to 4 inches opposite, simple dark green leaves; last late into late fall; non-showy to purple red fall color
- Flowers/Fruit: Yellow flower clusters in early spring; small red fruit in mid summer
- Other: Flaking bark, easy to transplant; no serious insect or disease problem; adaptable large shrub to small tree, better performance in cooler, not too dry conditions. Improperly pruned or stressed trees prone to basal suckering. One of ten top performers in state (NC State Univ.). Has flowered well in Raleigh.

- Chinese Fringetree, Chionanthus retusus
- Growth Rate: Moderate
- Site requirements: Sun to partial shade; range of soil types
- Texture: Coarse
- Form: Spreading, rounded; multi-stemmed
- Height: 15 to 25 feet
- Width: 10 to 25 feet
- Leaf: 3 to 8 inches opposite, leathery lustrous leaves
- Flowers/Fruit: Snow white, fragrant flowers in panicles at ends of shoots; .5 inch dark blue fruit on female trees
- Other: Exfoliating bark; very adaptable; tends to flower better in alternate years; easy to grow. Occasional late frost injury. One of ten top performers in state (NC State Univ.).
- Higan Cherry, Prunus subhirtella and Yoshino Cherry, Prunus x yeonsis
- Growth Rate: Moderate to fast
- Site requirements: Sun to partial shade; moist, well drained soil
- Texture: Medium
- Form: Upright and weeping varieties available, select upright unless specific site accommodates weeping habit.
- Height: 20 to 35 feet
- Width: 15 to 30 feet depending upon variety.
- Leaf: 2 to 5 inch alternate, simple leaves; bronze to reddish fall color
- Flowers/Fruit: White flowers in May; rarely fruits
- Other: Excellent spring color. Most adaptable and long-lived of the cherries for urban conditions, generally tolerable. Susceptible to Japanese beetles and other insect pests. Needs good soil drainage.
- Maple, Acer X Truncatum
- Growth Rate:
- Site requirements: Tolerates dry conditions
- Texture:
- Form: Round Headed tree
- Height: 25 feet
- Width: 20 feet

It would also be appropriate to utilize small trees, shrubs, flowers and ground cover in various locations to serve as accents, small screens and hedges. There are a wide variety of small shrubs (1 to 4 feet high), which are well suited to the area and require low maintenance. Small shrubs can be utilized in planters in combination with street trees or planted as edges to walks and pedestrian spaces.

Larger shrubs (4 to 8 feet high) are also useful as hedges, screens, and accent plants. Their size can be maintained through periodic pruning. Mid-size hedges could utilize shrubs such as Abelia, Barberry, Inkberry and Yew. Pieris, Viburnum and Mahonia could be strong accent plants because of their individual form, texture and plume or berry features. The characteristics of different shrubs vary substantially and the plantings should be selected in accordance to their location and purpose.

Street Lighting

The preferred street lamps for the town center area are traditional in style, decorative, and similar in design to other furnishings. More and shorter lights are preferred to fewer, high-intensity lights. The photos displayed are preferred types for the area. The specifications for the lampposts, luminaries, globes, brackets, lamp types, accessories and finishing coats are available through the Carolina Power and Light Company.

The height and location of the new decorative street lamps should be consistent throughout. The location of the street trees should not conflict with the effectiveness of the streetlights.

Pavers, Pavement Treatments

Ground texture is an important element in creating a pedestrian friendly environment. Textured surfaces can fulfill both aesthetic and practical purposes. When walking humans tend to look downward at a 15-degree angle – a textured surface is more interesting and pleasing to the eye. Textured surfaces (nonglare, nonslip) also provide a distinctive material to help establish the pedestrian zones at important downtown locations. Paving bricks/treatments will be used within the Town Center at various locations including sidewalks, at or around crosswalks and open spaces.

Paving bricks are available in a variety of, sizes, shapes, and colors. The paving patterns and uses should be consistent throughout the core section of the town center.

All public pavements, both pedestrian and vehicular, are required to be universally accessible according to the Americans with Disabilities Act; therefore the pavers must be ADA compliant.

Paving Brick specifications

The selected bricks/pavers must be suitable to the local climate and conditions. Paving bricks are classified according to the exposure environment. The two relevant classifications (American Society for Testing and Materials) are:

- Class SX (Weather) - Brick intended for use where the brick may be frozen while saturated with water.
- Class MX (Weather) – Brick intended for exterior use where resistance to freezing is not a factor.

The bricks/pavers must also be appropriate for their intended use and locations. They are classified according to the type of traffic exposure that they will experience:

- Pedestrian,
- Light Traffic, and
- Heavy Vehicular Paving Brick – High volume of heavy vehicles representing trucks or combinations of vehicles having 3 or more loaded axles.

Size
Pavers come in standard sizes of 2 ¼" x 4" x 8" with variations for particular pavers such as edges, steps, handicapped detectable warning pavers and others.

Color
The color should be an integral part of the brick, not an applied feature. In quality products the color of the brick is determined by the raw material used and the special additives applied when extruded. A process known as "flashing" which involves changing the firing environment may also influence color. Pavers are available in a range of colors including red, brown, gray, tan or sand.

Typical Street Configuration

The following is a cross-section, with dimensions, intended to depict a typical Town Center Street. There will, because of necessities associated with street width, utility locations, curvatures of the street and other conditions, situations where modifications will be essential.

Typical Pedestrian Oriented Street

11' Vehicular Lanes

Sidewalk Minimum 6' Each Side of Street

Street Trees in Furnishing Zone 3' Minimum

Public Signage

There should be a comprehensive program of public signage, including wayfinding signage, within the Town Center Area. Public wayfinding signage should be used to help direct motorists and pedestrians to key points. A consistent, unique and distinctive style of public signage should be used throughout, to reinforce a distinctive and cohesive identity for the Town Center Area. The design, style and placement of public signage, particularly pedestrian signage, should complement other streetscape elements such as furniture and street lamps.

- The Manual on Uniform Traffic Control Devices (MUTCD) governs the size, shape, color, content and location of all traffic control signage. It also encourages a conservative use of signs. Unnecessary signs and posts represent a hazard to errant motorists and may cause an obstruction to pedestrians and bicyclists. Unnecessary signs also represent an ongoing maintenance cost and are a source of visual blight.
- For motorists, signs should be mounted fairly high and indicate destinations relatively far away.
- The MUTCD does not establish standards for pedestrian signs or markings. In general, pedestrian signs need to be lower, smaller, and in the pedestrians' line of sight. Distances should be given in measurements meaningful to pedestrians such as blocks or average walking time.
- To avoid clutter cluster signs together on one post placed in strategic locations.
- Kiosks, "finger posts," and building corners are good locations for pedestrian oriented signs.
- Pedestrian oriented signs should be unobtrusive, easy to read, aesthetic, and placed in such a way that they are visible to pedestrians and not to motorists. Signs should be readily observable, with clear and precise information.
- Signing needs to be understood by the vast majority of the population, including non-English speaking people and children. The use of internationally recognized symbols should be considered as an effective way to identify features to all pedestrians.
- The use of "No Turn on Red" signs at traffic signals should be evaluated on a case-by-case basis, and less restrictive alternatives should be considered.
- Pedestrian push button signs should be used at all pedestrian activated signals. It is important to provide guidance to indicate which street the button is for (either with arrows or street names). The signs should be located adjacent to the push button and be visible to approaching pedestrians.
- Push buttons at signal locations need to be installed at heights easy to reach by people in wheelchairs.
- Actuated push buttons are not necessary at crossings where there is adequate time to phase a pedestrian.
- Pavement word and symbol markings such as "SCHOOL XING" or "PED XING" may also be used as motorist warning devices. Their use should be kept to a minimum to retain effectiveness.
- Pavement markings for pedestrians, such as "LOOK BOTH WAYS" before entering the street may also be used.
- Audible systems in the pedestrian environment including, chirping devices, click, and tones may be strategically located to warn sight-impaired pedestrians of condition along a route, particularly at street crossings, or to notify them of important information (at kiosks and bus depots). One example includes chirping devices being placed with traffic signals at crosswalks to notify pedestrians when the crossing phase has been activated.
- For the sight-impaired, Braille strips can be added to the edges of signs that are reachable and located for that purpose.

Utilities

- Consideration should be given to the continuation and expansion of the process of burying the aboveground utility lines along certain key streets within the Heart of the Downtown.
- Potential conflicts between utilities, landscape plantings and other amenities should be addressed during the design phase in order to minimize conflicts. The Town will make efforts avoid damage or destruction of plantings within an easement during the course of servicing. In the event that plantings are damaged or destroyed during servicing, the Town will not be liable for the damage or destruction of plantings. The Town will reseed as necessary for erosion control.
- Small and medium shrubs, ground covers, or grasses may be planted within an easement. Small trees (under 30 feet in height at maturity) may be planted a minimum of 10 feet from the centerline of the closest pipe within the easement or 10 feet from the center of the easement, whichever is greater. Large trees should not be placed within any Town utility easement.
- All utility installations within rights-of-way should be consistent with NCDOT's current Utility Policy.
- There should be a design goal of facilitating expectable access to utilities while causing minimal damage to sidewalks, trees, plantings and other street elements. Measures should be taken to minimize potential for tree root damage to utilities while also making allowance for the needs of the tree. Appropriate tree rooting space design options addressed in the landscape section of these guidelines have application here. Where putting utilities underground is not feasible, it may be possible to consolidate them on fewer poles.
- All downtown streetscape elements should be carefully designed in order to provide adequate space for furnishings and utility facilities, outside the main travel way used by pedestrians

Public Artwork.

- The guidelines support the continued acquisition, development and placement of high quality artwork within the public places throughout the Town Center. Works of art should be included in the development of both indoor and out door spaces used by the public, town center gateways, public rights of way, plazas, parks, waiting places, street furniture, transit stops and other appropriate sites offering continuing opportunities to integrate artwork into the area. In general such artwork should add to the downtown's unique identity and add to the pedestrian experience.

- The Public Art Advisory Board serves as Cary's steward of public art and their document the Public Art Master Plan should be used as a reference.

Sources – Furniture

- Time-Saver Standards for Landscape Architecture, 2nd Edition, McGraw Hill, 1998

- Victor Stanley, Inc., PO Drawer 330 – Brickhouse Road, Dunkirk, MD 20754-0330
  800-368-2573, Fax 410-257-7570 Web Site: http://www.victorstanle.com

- Kettle Creek Designs, Windsor Barrel Works, PO Box 47, Kempston, PA 19529
  800-527-7848, Web Site: www.kettlecreek.com

- Doty & Sons Concrete Products, Inc., 1275 East State St., Sycamore, IL 60178
  800-233-3907, Fax 815-895-8035, Web Site: www.dotyconcrete.com

- Daytech Mfg. Inc., 227 Thorn Avenue, Orchard Park, NY 14127
  800-since-07, Fax 716-667-1709, We Site; www.daytechmfg.com

- Cascade Recreation, Inc. (Sit With Us), PO Box 64769, University Place, WA 98464
  888-280-8010, Fax 253-566-1170, e-mail infor@cascadeerec.com

- BCI Burke, PO Box 549, Fond du Lac, WI 54936-0549, 920-921-9220, info@bciburke.com

- France Andrew Site Furnishings, Ltd., 19154 95 A Avenue, Surrey, BC, Canada V4N 4P2
  800-565-6579, Fax 604-888-2754, Web Site; www.francesandrew.com

- Ironsmith Designs (http://www.ironsmith.cc/treegrates.htm), distributor, Geospec Environment, 2017 N. Davidson St., Charlotte, NC (http://www.geospec.com) 704-333-1040

- Creative Pipe, PO Box 2458, Rancho Mirage, CA 92270-1087
  800-644-8467, Web Site; http://www.creativepipe.com

- Huntco Supply, Inc., PO Box 10385, Portland, OR 97296
  800-644-8467, Web Site; http://www.huntco.com

- Petersen Manufacturing Co., PO Box 664, Denison, Iowa 51442
  800-832-7383, Fax 712-263-5090, Web Site; www.petersenmfg.com

- Fairweather Site Furnishings, 1525 Vivian Court, Port Orchard, WA 98366
  800-323-1798, Fax 360-895-1284, Web Site; www.FairWethersf.com

- Titan, PO Box 1488, Concord, MA 0172
  800-378-3080, Fax 978-0399, Web Site; www.AmericanTitan.com

Sources – Landscaping

- North Carolina State University, Mountain Horticultural Crops Research and Extension Center.
- The North Carolina Urban Tree Evaluation Program – Top Ten Performers
- The North Carolina Urban Tree Evaluation Program – Recommended Trees for Urban Landscapes, Feb., 2000
- The North Carolina Urban Tree Evaluation Program – Urban Trees for Use Under Utility Lines, Feb., 1999
- Leaflet No. 621, The Use of Small and Intermediate Size Trees in the Landscape, Leaflet No. 634, Shrubs 1-4' for North Carolina Landscapes, Leaflet No. 635, Shrubs 4-8' for North Carolina Landscapes, and Leaflet No. 637, Small and Intermediate Trees for North Carolina.
- JC Raulston Arboretum at NC State University, Current Plantings, Collection

Sources – Pavers

- The American Society for Testing and Materials, West Conshohocken, PA 19428-2959
  Standard Specifications for Pedestrian and Light Traffic Paving Brick (Designation C 902-99b) and Heavy Vehicular Paving Brick (Designation C 1272-99a)

- Pine Hall Brick, 2701 Shorefair Drive, Winston-Salem, NC 27105
  800-334-8689 or 336-779-6116, Web Site; www.pinehallbrick.com

- Brandco Inc., Leesville Industrial Park, PO Box 90005, Raleigh, NC 27675-0005
  919-787-8453 or 919-787-7700, Web Site; www.brandco.com

- BeautiBrick, Inc., 5420 Duckling Way, Raleigh, NC 27610
  919-618-4142, Web Site; www.beautibrick.com

- Endicott Clay Products Co., PO Box 17, Fairbury, NE 68352
  402-729-5804

- Glen-Gery Brick, Iberia Plant, PO Box 207, Iberia, OH 43325
  419-468-5002, Web Site; www.glengerybrick.com

Street Furniture

	Victor Stanley, Inc., Dunkirk, MD	Kettle Creek Corp./Windsor Barrel Works, Kempton, PA	Doty & Sons Concrete Prod. Sycamore, IL	Daytech Manufacturing Orchard Park, NY	Sit With Us/Cascade, Inc. University Place, WA	BCI Burke Fond Du Lac, WI	Francis Andrew Site Furnishings, BC Canada	Ironsmith Designs	Creative Pipe Rancho Mirage, CA	Huntco Supply, Inc. Portland, OR	Petersen Mfg. Co. Denison, IA	Fairweather Site Furnishings Port Orchard, WA	Titan Concord, MA
Bike Racks/Storage						X	X		X	X	X	X	
Benches	X		X	X	X	X	X		X		X	X	X
Bollards			X				X	X	X	X	X		
Bus Shelters				X					X				
Drinking Fountains			X								X	X	
Planters	X	X	X								X	X	X
Receptacles/Trash	X	X	X		X	X	X		X		X	X	X
Receptacles/Recycling	X	X	X								X		X
Tree Guards & Grates	X							X			X	X	
Kiosks				X									

X Indicates item is comparable to earlier preferences, when available.

- Victor Stanley, Inc., PO Drawer 330 – Brickhouse Road, Dunkirk, MD 20754-0330
  800-368-2573, Fax 410-257-7570 Web Site; http://www.victorstanley.com
- Kettle Creek Designs, Windsor Barrel Works, PO Box 47, Kempton, PA 19529
  800-527-7848, Web Site; www.kettlecreek.com
- Doty & Sons Concrete Products, Inc., 125 East State Street, Sycamore, IL 60178
  800-233-3907, Fax 815-895-8035, Web Site; www.dotyconcrete.com
- Daytech Mfg., Inc., 227 Thorn Avenue, Orchard Park, NY 14127
  800-since-07, Fax 716-667-1709, We Site; www.daytechmfg.com
- Cascade Recreation, Inc. (Sit With Us), PO Box 64769, University Place, WA 98464
  888-280-8010, Fax 253-566-1170, e-mail infor@cascadeerec.com
- Recreation Resource, Inc. (Burke equipment), PO Box 371, Kennett Square, PA 19348
  800-220-4402, Fax 610-444-3359
- France Andrew Site Furnishings, Ltd., 19154 95 A Avenue, Surrey, BC, Canada V4N 4P2
  800-565-6579, Fax 604-888-2754, Web Site; www.francesandrew.com
- Ironsmith Designs (http://www.ironsmith.cc/treegrates.htm), distributor, Geospec Environment, 2017 N. Davidson St., Charlotte, NC (http://www.geospec.com) 704-333-1040
- Creative Pipe, PO Box 2458, Rancho Mirage, CA 92270-1087
  800-644-8467, Web Site; http://www.creativepipe.com
- Huntco Supply, Inc., PO Box 10385, Portland, OR 97296
  800-644-8467, Web Site; http://www.huntco.com
- Petersen Manufacturing Co., PO Box 664, Denison, Iowa 51442
  800-832-7383, Fax 712-263-5090, Web Site; www.petersenmfg.com
- Fairweather Site Furnishings, 1525 Vivian Court, Port Orchard, WA 98366
  800-323-1798, Fax 360-895-1284, Web Site; www.FairWethersf.com
- Titan, PO Box 1488, Concord, MA 0172
  800-378-3080, Fax 978-0399, Web Site; www.AmericanTitan.com
- Time-saver Standards for Landscape Architecture, 2nd Edition, McGraw Hill, 1998