



## Montgomery County Community Revitalization Program

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# Making Your Downtown Improvements Last

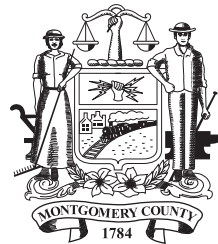
*Design, Installation, and Maintenance Guide*

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# Making Your Downtown Improvements Last

*Design, Installation, and Maintenance Guide*

Prepared by the Montgomery County Planning Commission  
August 12, 2009





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*Montgomery County is fortunate to have so many historical town centers. Many of them have been updated in recent years, but only proper maintenance will ensure their appeal in the years to come.*

## Introduction

We are all too familiar with the sight of a downtown commercial center that has fallen on hard times due to deindustrialization, population migration, or any number of causes that induce economic distress for a community. Once bustling main streets now struggle amidst cracked sidewalks, dying vegetation, vacant storefronts, and paint peeling off of street furnishings. Towns in Montgomery County have fought hard to keep these problems from afflicting their central business districts and neighborhoods. Using local, county, state, federal, and private funds, main streets and town centers throughout the county are implementing physical improvements that restore both the image of their downtowns as well as the business and pedestrian environment.

Any physical improvement will eventually begin to deteriorate and transform from an asset to a liability if left untreated. The time to worry about maintenance is not when a problem develops, but rather during the planning stages of any improvement. The purpose of this guide is to help communities identify the maintenance and care that is needed to get the most out of their public amenities and infrastructure investment.

## Revitalization in Montgomery County

Since 2000, Montgomery County has been a funding partner for eligible municipalities through its Community Revitalization Program. Through 2009, the Program has made 39 million dollars available to help fund the high cost of implementing projects that foster economic development in older towns and boroughs. This investment speaks to the high priority placed on traditional town centers by Mont-

gomery County. The Community Revitalization Program Board insists that grant recipients do their best to prolong the life of these projects and protect the investments made by the municipality and county, as well as other funding partners. The Board also recognizes that maintenance is not always an easy task and offers this guidebook as a tool to help tackle maintenance issues. Of course, these recommendations are not just useful to Revitalization communities. Any municipality might benefit from the information contained in this guide and can use it when making public investments or reviewing privately funded improvements.

## Project Types

The Community Revitalization Program has a specific list of eligible project types. This guidebook addresses common issues with these projects, but the information may also lend itself to other public projects outside of the program's scope or involvement. There are three primary areas of concern when it comes to maintenance on public improvements, as listed below:

- **Hard Surfaces.** The foundation for most improvements, especially in the streetscape, is both an engineering concern as well as an opportunity for decoration and identity. Sidewalks, roadways, crosswalks, medians, and plazas serve different functions but can use similar materials. There are positive and negative properties to all material choices that must be considered carefully.
- **Vegetation.** Most revitalization projects are of an urban nature, but there is no doubt as to how even a little "greenery" can make an area more attractive and welcoming. Trees, shrubs, flowers, and grasses are necessary components to



any good streetscape or public area, but as living species, they require important care and good planting conditions to ensure their health and survival.

- **Furnishings** The amenities that fill out a downtown serve important functions, but also set the tone for the look of a downtown. Pedestrian-scale street lights, benches, waste receptacles, bicycle racks, bollards, bus shelters, and way-finding signs usually require the least maintenance, but their design and placement are just as important as the rest of a project's elements.

## Design and Installation

The term *maintenance* is generally associated with care or responsibility that occurs after an improvement is already in the ground (or actually becomes the ground, as the case may be). However, the design of a project, the materials selected, and the installation technique could have as much bearing on the success and life of a project as post-installation care. In some cases, it is even more important. Therefore, some of the advice and topics that follow will relate to how an improvement is installed.

Street trees are a good example of pre- and post-installation care needed. Most urban vegetation will eventually die if neglected, but the strength and general health of a tree is also dependent on the conditions surrounding its planting. Not enough soil volume, constricting tree grates, and improper tree positioning will threaten a street tree's existence no matter how well the municipality waters and prunes the tree. Therefore, the design for planting street trees is a necessary discussion point.

The engineering required for physical improvements is a much more technical and precise exercise than

the scope of these guidelines provides. It is understood that municipalities will trust qualified professionals to help them determine the final selections made in material selection and installation for a specific situation. However, these guidelines do provide a broader starting point for the municipality and are intended to help officials ask the right questions and understand the implications of their choices. Always remember to consult with utility companies and any regulatory agencies, like PennDOT, early in the process to determine exactly what will be allowed or feasible.

We also want to stress the importance of planning for maintenance in the design phase of a revitalization project. The required maintenance should be a known factor and the appropriate budget and resources should be considered when designing a project.

## Administration

Municipalities are generally assigned the burden of maintenance, but there are some alternatives to lessen the load. The appendix provides information and recommendations on forming Main Street Programs or Business Improvement Districts that may be able to take ownership of some maintenance responsibilities. Business owners and public officials both have vested interests in the condition of a downtown and should be able to find common ground on keeping the business environment at its most attractive.

Municipalities may wish to implement programs that provide assistance to business owners or residents so that they have the resources to keep their properties on par with public beautification efforts. The appendix also provides details on such efforts as façade improvement programs and homeownership initiatives.



*Hard Surfaces...*



*...Vegetation...*



*...and Street Furnishings all need proper maintenance to endure.*

# Part 1

## Hard Surfaces

Sidewalks, streets, and plazas comprise three distinct locations to consider a long-lasting surface. Sidewalks provide for heavily traveled linear walkways. Streets, or more specifically intersections and medians, can contain pedestrian areas, such as crosswalks, but also must hold up to heavy vehicular traffic and meet road standards. Likewise, parking lots also must serve the needs of vehicles and pedestrians. Plazas may undergo less stress in terms of usage, but they are often the most decorative and can reflect a variety of paving styles.

The life span of a hard surface is just as dependent on the type and quality of installation as it is the post-installation maintenance care. This chapter considers the best practices for installing and maintaining paved surfaces. The focus will be on three specific applications of surfaces in revitalization areas, but the materials used and the advice surrounding them will overlap and may also apply to other projects where a hard surface installation is included.

**This part discusses the following:**

- Sidewalks
  - Pavers (Brick, Cement, Stone)
  - Stamped Concrete
- Streets
  - Crosswalks (Inlaid Thermal Plastic, Patterned Surface Dressing)
  - Medians
- Plazas
- Graffiti



## Sidewalks

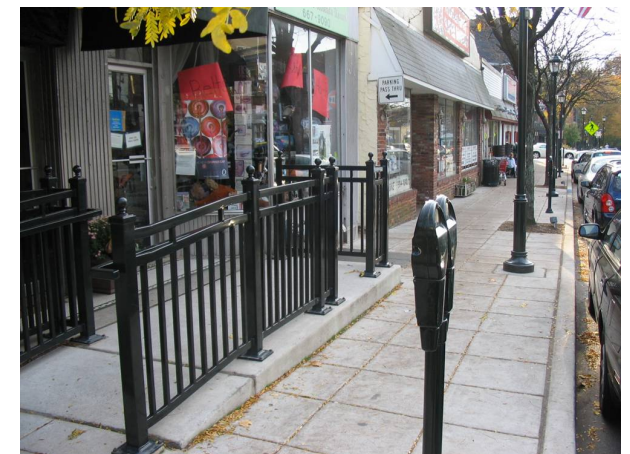
Typical sidewalks and walkways are paved with Portland cement concrete. However, the creation of an attractive streetscape will often include augmenting the basic concrete areas, or entirely replacing them, with decorative surfaces, such as stamped concrete or unit pavers. Basic concrete installation is straightforward, but the potential for a problematic sidewalk is heightened when pavers or specialized concrete is involved.

There are many options when it comes to implementing decorative surfaces in a streetscape design. A common approach is to create a mixture of more generic paving and a decorative surface. In this case, the area between the curb and the actual walkway, known as the *verge*, is the best place to install a patterned treatment. The verge is also the area to put assorted streetscape fixtures, such as lights, trash receptacles, signage and plantings, which can complement the decorative surface. Corners and plaza entrances are other good opportunities for decoration.

Municipalities should also be careful not to “overdesign” their streetscape. The horizontal surface is just one element and a busy paving pattern can clash with vertical elements, such as facades, vegetation, signage, retaining walls, and other fixtures.



*The streetscapes below illustrate varying designs using decorative surfaces. Communities can focus pavers in the verge area, implement a decorative surface through the entire sidewalk width, or create a basic mixture of the two.*



*Sometimes an attractive streetscape can be achieved with other design choices and a simple paving approach. The pictures above show a community that successfully implemented a “less is more” approach.*

## Pavers

Pavers refer to any type of solid block installation where a large number of hard blocks are laid into the ground forming a continuous surface with a distinct pattern. Paving blocks can be made out of a number of materials. Brick is probably the most common type of paver in sidewalks, but other possible materials are stone, granite, precast concrete, and asphalt. See the table to the right for a comparison between each material.

Pavers are traditionally a beautiful way to augment downtown sidewalks and walkways, but they can become a liability if not properly installed and maintained. See the *Paver Material Comparisons* chart for the benefits and hazards of using pavers.

**Installation.** As with poured concrete paving, a surface with unit pavers begins with a compacted subgrade and aggregate base layer. A sand bed is then applied as a smooth level surface that the pavers can be set into. Additional sand fills in the joints between pavers and the dense sand is compacted to keep the paver units firmly in place.

There are two major issues that arise with paver installations as opposed to poured concrete. Settling occurs when individual pavers sink further down into the sand bed due to usage over time and natural shifts in the earth's surface. This creates an uneven surface that can become a tripping hazard. Eventually, the pavers will have to be reset.

## Paver Material Comparisons

Material	Advantages	Disadvantages	Cost
<b>Precast Concrete</b>	<ul style="list-style-type: none"> <li>Many shapes, sizes, textures, and colors</li> <li>Less expensive than brick or stone</li> <li>Interlocking variety can reduce uneven settling</li> </ul>	<ul style="list-style-type: none"> <li>Colors may eventually appear faded</li> <li>More likely to experience surface erosion</li> <li>Some consider them less attractive</li> <li>Efflorescence</li> </ul>	Lowest, although slightly higher than poured concrete
<b>Brick</b>	<ul style="list-style-type: none"> <li>Traditionally attractive</li> <li>Wide variety of natural colors</li> <li>Hard surface resistant to wear and cracking</li> </ul>	<ul style="list-style-type: none"> <li>Difficult to clean</li> <li>Can become uneven</li> <li>Possible damage from snow removal equipment</li> <li>Slippery when wet</li> <li>Efflorescence</li> </ul>	Higher than concrete pavers
<b>Stone</b>	<ul style="list-style-type: none"> <li>Handsome</li> <li>Usually the most durable, especially granite</li> </ul>	<ul style="list-style-type: none"> <li>Some stones more susceptible to weathering or road salts</li> <li>Surfaces can be uneven or too smooth, depending on type</li> <li>Cost is high.</li> </ul>	Most expensive material



*Some settling has occurred around the pole installation above. In addition to being an unsafe walking surface, the depression also allows for debris to collect.*



*This area of the verge has sunken next to an unused tree pit. The settling of sand beneath pavers is common, so no more than a half-inch deep bed is recommended.*



One common cause of settling is having too much sand in the setting bed beneath the pavers. This layer of sand should be no thicker than one half inch.

An extra measure used by some municipalities is to install a layer of poured concrete below the pavers and above the aggregate. Mortar, instead of sand, can be used to set the unit pavers. This creates a structural base that resists settling. Of course, there are drawbacks to using concrete in this situation. Laying poured concrete and pavers throughout an entire streetscape could be cost-prohibitive, so a municipality may choose to only use concrete in the most heavily used or important areas. There can also be issues with water drainage since the concrete will stop surface waters from penetrating deeper. Any nearby street trees may suffer from a reduction in water reaching their roots. As always, consult with an engineer to determine the best way to install pavers in a specific situation, and check manufacturer specifications.

Settling problems can also arise when pavers are installed adjacent to less stable ground such as the soil in a tree pit. A well-compacted base layer and appropriate edging that respects the future growth of roots is recommended.

Another issue with pavers are weeds or moss that grow up between the pavers and take root in the sand or aggregate. There are options during installation to limit the potential for weeds. One is to use a binder that will

### ***Utility Work***

The flexibility of using pavers is an advantage when utility work calls for the temporary or permanent removal of a section of paving. However, if those units are stacked to the side or poorly replaced, the results can be unattractive and unsafe. Utility companies are generally required to return hard surfaces to their previous state, but a municipality is wise to address the issue up front and have a reserve stock of pavers in case matching replacements are needed. If units need to be cut to accommodate access, never use less than half of a standard unit.





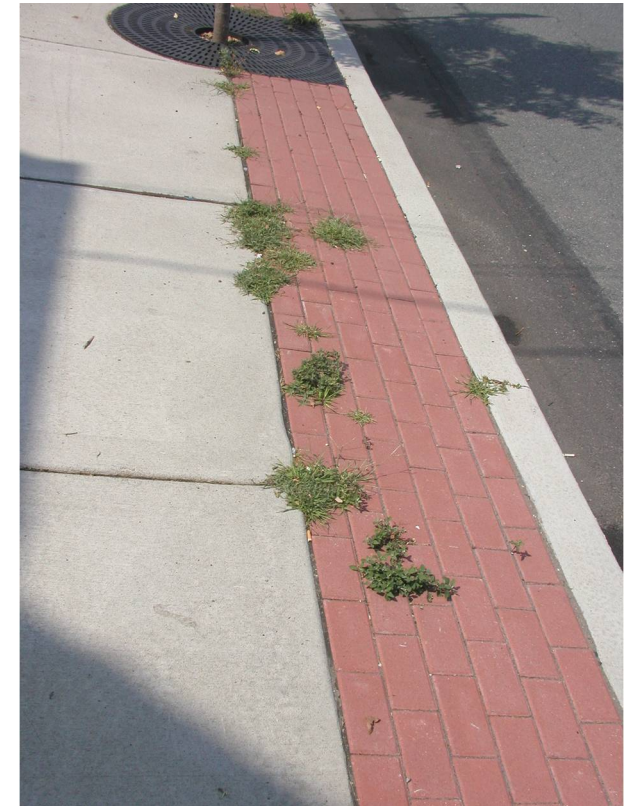
harden the sand and make it difficult for weed seedlings to penetrate. Using mortar instead of sand to set the pavers will eliminate the potential for weeds, but it makes for a higher installation cost and should the mortar crack then weeds can again become an issue. Some communities have reported success with using the concrete base detailed above instead of just an aggregate layer. However, if sand is used between the pavers, it is still possible for weeds to germinate since the seeds come from the surface and not through the ground.

Most issues with pavers or any other paving options are usually a result of poor installation. Inspecting the work of contractors is key. In fact, it is a good idea to retain a design professional or engineer to oversee the installation and make sure it goes as planned.

**Maintenance.** Most pavers will have to be reset at some point. The length of time before doing so is largely dependent on the quality and type of installation. Using a concrete base and controlling weeds in a timely manner will increase the life of the installation. Weeds should be sprayed as needed. Choose a herbicide that is biodegradable and has a preventative formula that will keep weeds from returning for at least three months. Residual herbicides can prevent weeds up to a year, but are intended to be sprayed before weeds take root in bare cracks or sand between pavers. With any herbicide consider its effects and the proximity to desired vegetation before using. Anyone applying a herbicide on public property should be certified as noted in the right margin.

### ***Spraying for Weeds—Are You Certified?***

Even the best laid paved surface may fall prey to weeds growing in a crack or sand base. The most common defense at that point is to use a herbicide spray (make sure it is biodegradable). This is simple enough, but remember that state law requires that any public herbicide applicators be certified by the Pennsylvania Department of Agriculture. This applies to both a staff person of the municipality as well as any private business for hire. Fortunately, certification is relatively inexpensive and simple, although an exam must be passed by the applicant. There are different levels required depending on the application. Municipalities will want to at least be covered under Categories 6 and 10—Ornamental and Shade Trees and Right-of-way applications, respectively.



Like all hard surfaces, the municipality should power wash paver surfaces to get rid of grime and keep the original color. Be sure to check with the manufacturer on any important restrictions to the material that is used. While most pavers should hold up to a high pressure water spray, there is usually a maximum pressure before damage is incurred. Ideally, a paved main street area should be washed at least three times per year. Of course, the level of use may dictate a greater or lesser frequency. Chemical cleaning applications, while discouraged in most cases, should be tested for any discoloring effects. De-icing agents can cause premature wear and must also be used carefully. They should not be used at all for the first six months after installation.

While costly, penetrative Sealants can provide the best opportunity to protect pavers from discoloration and general wear. They are especially effective on brick pavers, eliminating any color bleeding from the bricks as well as efflorescence, the white powdery substance that can coat the surface of bricks.

One of the benefits to using pavers is that if a small area gets damaged, then the municipality can simply remove the damaged pavers and replace them. When buying pavers for installation, it is a good idea to purchase a reserve stock to use as replacement units. Having reserves from the original order will also better guarantee that any replacements will match the originals in color and texture.



*Only experienced power washers should be set loose on municipal pavement. Above is an example of what can happen to concrete when the pressure is set too high.*

### **Efflorescence**

It is not unusual to find a mysterious white powder coating appearing on hard surfaces, such as brick or cement pavers. The powder is actually a salt residue caused by a process called efflorescence. This process occurs when salts exist within the material (or below it). Water will rise through the material's pores and carry some of the salt with it. When the water reaches the surface it evaporates leaving the powdery white residue of the salt behind.



Efflorescence is a natural process and rather unpredictable. Some manufacturing techniques exist to reduce its likelihood, but nothing is foolproof. Eventually, the process will run its course and all of the salts will be exhausted. Spraying water can sometimes remove the powder, but scrubbing may be necessary. The only post-installation preventative measure is to apply a sealant that can fill the pores in the paving material and block salts from rising to the surface. Sealants are expensive, and varieties that only create a film and do not penetrate the surface will fail to stop the problem. Salts will still rise and become visible, but now a barrier will make them even harder to remove.



## Stamped Concrete

An alternative some municipalities have chosen to create a decorative surface pattern is the use of stamped concrete. Pavers will generally give the best look to a walkway, but stamped concrete has the potential to look attractive, cost less, and be easier to install. However, long-term durability can be an issue.

While stamped concrete has a true advantage in its versatility in the design and installation stage, the situation changes once it is installed. Repairing stamped concrete is more difficult and costly than unit pavers, and while a high quality concrete installation should last many years, some municipalities have suffered from failing concrete sooner than later. If a municipality chooses stamped concrete, the warranty and maintenance options from installers should be weighed carefully.

**Installation.** Stamped concrete should use the same quality materials as a typical paved concrete surface. The only difference arises when it comes time to set the concrete. Before the concrete cools, the installer will use a custom stamp to insert a pattern into the surface. The concrete may also be colored prior to stamping the design. As with any poured concrete, joints should still be built into the pavement so that cracks will be more likely to develop along the joint line rather than sporadically across the surface, making repairs more difficult and unattractive.



*Stamped concrete can be made into a wide variety of designs. Public use often mimics the brick paver look as seen in these examples.*



*The example below shows a cobblestone pattern made with stamped concrete.*



### **Pavers vs. Stamped Concrete**

#### **Appearance - Pavers**

It can depend on the style and material, but pavers generally have a more traditional look with richer colors.

#### **Initial Cost - Stamped Concrete**

Concrete will usually be cheaper to install compared to pavers although long-term maintenance costs may run higher.

#### **Maintenance/Durability - Pavers**

Concrete will eventually crack making replacement difficult and sometimes inconsistent if color is involved. Weeds can be a more persistent issue with pavers. Damaged pavers can be replaced by the unit.

#### **Snow Removal - Pavers**

Stamped concrete is usually more uneven than quality installed pavers due to the unfilled gaps between pattern shapes. De-icer salts have the potential to deteriorate both stamped concrete and clay brick pavers.

#### **Overall - Pavers**

Brick, concrete, or stone pavers generally have a better look and last longer.

**Maintenance.** The most important issue with using stamped concrete is minimizing cracks. Unfortunately, all concrete will eventually crack at some point, and as opposed to pavers, it is much more difficult to seamlessly repair a small section of stamped concrete. When a crack appears, it should be filled as soon as possible with patching compound as recommended by the manufacturer. This will prevent the crack from becoming larger or spreading along the surface. If too many cracks develop, then the concrete may have to be reapplied, which can turn a cheaper paving alternative into a more costly one. Before reinstalling, the municipality should make sure that there is not a recurring issue with either the underlying base or the mix used that caused the cracks in the first place.

As with other surfaces, stamped concrete should be kept clean on a regular basis. Power washing, as discussed under maintenance for pavers, is recommended but should be professionally applied so as not to damage the actual concrete.

**Stamped Asphalt.** This option can also be applied on pedestrian surfaces, but it is generally the least durable option. While it can be a good choice for pure pedestrian environments like park or plaza walkways, use on a busy sidewalk is best confined to the curbside area known as the “verge,” where there is less direct impact on the surface.



*Cracking in stamped concrete is a maintenance problem with no easy solution. The crack should be filled, but it still leaves an unattractive face. Concrete based pavers are less likely to crack, but even if they do, at least the damage is confined to a single unit that can be replaced. These areas would require repaving of the entire area to return to a seamless pavement with correct color matching.*





## Streets

This section is focused on the pedestrian elements of streets, which are usually confined to intersections. The roadways themselves are subject to rigid engineering standards dependent upon ownership. Some of the communities in revitalization areas are located along state owned roadways. Any improvements to those intersections, crosswalks, or the edge of the cartway will be subject to PennDOT standards and permit approvals. Communities seeking improvements on roadways not owned by the Commonwealth will have a few more options to consider.

## Crosswalks

Pedestrian crosswalks on asphalt roadway surfaces are usually designated with a simple white paint striping. High profile intersections in downtown areas may utilize stone or brick pavers for a more distinctive crosswalk and intersection. Unit pavers and stamped concrete are being used by some municipalities, but decorative asphalt treatments have become a very popular alternative in the last few years. In fact, PennDOT will currently only allow two types of decorative crosswalk applications on state roadways and they are both asphalt treatments. If a municipality's downtown streetscape is located on a state road, the choices are limited. On locally owned roads,

### *Decorative Paving on Streets - Options*

<b>Inlaid Thermal Plastic</b>	<ul style="list-style-type: none"> <li>• Pre-cut thermoplastic layer melted into impressions set in the asphalt</li> <li>• Quick to install - can be ready for traffic in a few hours</li> <li>• Flush finish is snowplow friendly</li> <li>• Unique look compared to alternatives can foster strong opinions</li> <li>• Should last as long as the roadway surface</li> <li>• Allowed on state roads, subject to PennDOT design standards</li> </ul>
<b>Patterned Surface Dressing</b>	<ul style="list-style-type: none"> <li>• Less than an inch thick layer of polyurethane resin-aggregate mixture set into the roadway after milling</li> <li>• Gives the look of pavers with less maintenance</li> <li>• Should last as long as the roadway surface</li> <li>• Flexible texture and stamping designs</li> <li>• Allowed on state roads, subject to PennDOT design standards</li> </ul>
<b>Pavers</b>	<ul style="list-style-type: none"> <li>• Setting of individual units across the crosswalk area</li> <li>• Traditional look gives distinction to an intersection</li> <li>• More maintenance required than with asphalt treatments</li> <li>• Pavers may eventually have to be reset - especially on crosswalks where pedestrian safety is paramount</li> <li>• Individual pavers can be replaced with little visible evidence</li> <li>• Uneven surfaces can become damaged by snowplows</li> </ul>
<b>Stamped Asphalt</b>	<ul style="list-style-type: none"> <li>• Asphalt surface is melted with design or texture imprints and a colored top coating is applied</li> <li>• Coating can wear off with frequent vehicular use</li> <li>• Not recommended for heavily used intersections</li> <li>• Allowed on state roads, subject to PennDOT design standards</li> </ul>
<b>Stamped Concrete</b>	<ul style="list-style-type: none"> <li>• Concrete installation with stamped patterns across intersection</li> <li>• Replaces asphalt in crosswalk or intersection</li> <li>• Mimics the look of brick pavers well</li> <li>• Concrete is subject to cracking, especially from heavy trucks</li> <li>• Repair is difficult and usually involves tearing out the whole area</li> <li>• Not recommended over paver or asphalt options</li> </ul>

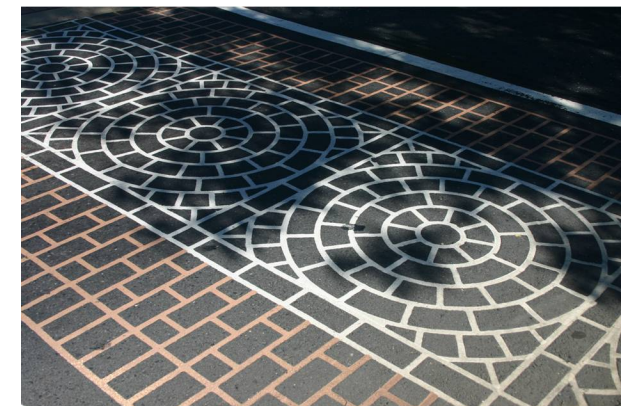
municipalities may still consider pavers or stamped concrete, but some are also opting for the asphalt treatments. Of course, PennDOT standards can always change, so a municipality should confirm the current standards with its engineer and a PennDOT representative. A maintenance agreement will also be required to be signed by the municipality.

**Inlaid Thermal Plastic.** More and more municipalities have chosen this product over painted lines. Installation is quick, but should be done by a contractor approved or licensed by the manufacturer. First, the asphalt in a roadway is heated so that a patterned template can be used to imprint the desired pattern. The asphalt must be in good condition, or it will need to be reinstalled before the thermal plastic can be set. Next, a pre-cut thermoplastic material is set into the impressions and fused to the asphalt surface. The whole process can be done overnight.

There are no proven studies that a crosswalk made with inlaid thermal plastic provides any real benefit in terms of safety and visibility as opposed to a traditional painted crosswalk. However, it does offer a distinct design alternative and has some advantages over other types of decorative crosswalks, as shown on the preceding page. Not all thermal plastic options are permitted by PennDOT. Only certain color grades, dimensions, and patterns are allowed on state owned roads.



*Inlaid thermal plastic has replaced many traditional painted crosswalks. Pictured in these examples is the “wagon wheel” pattern.*



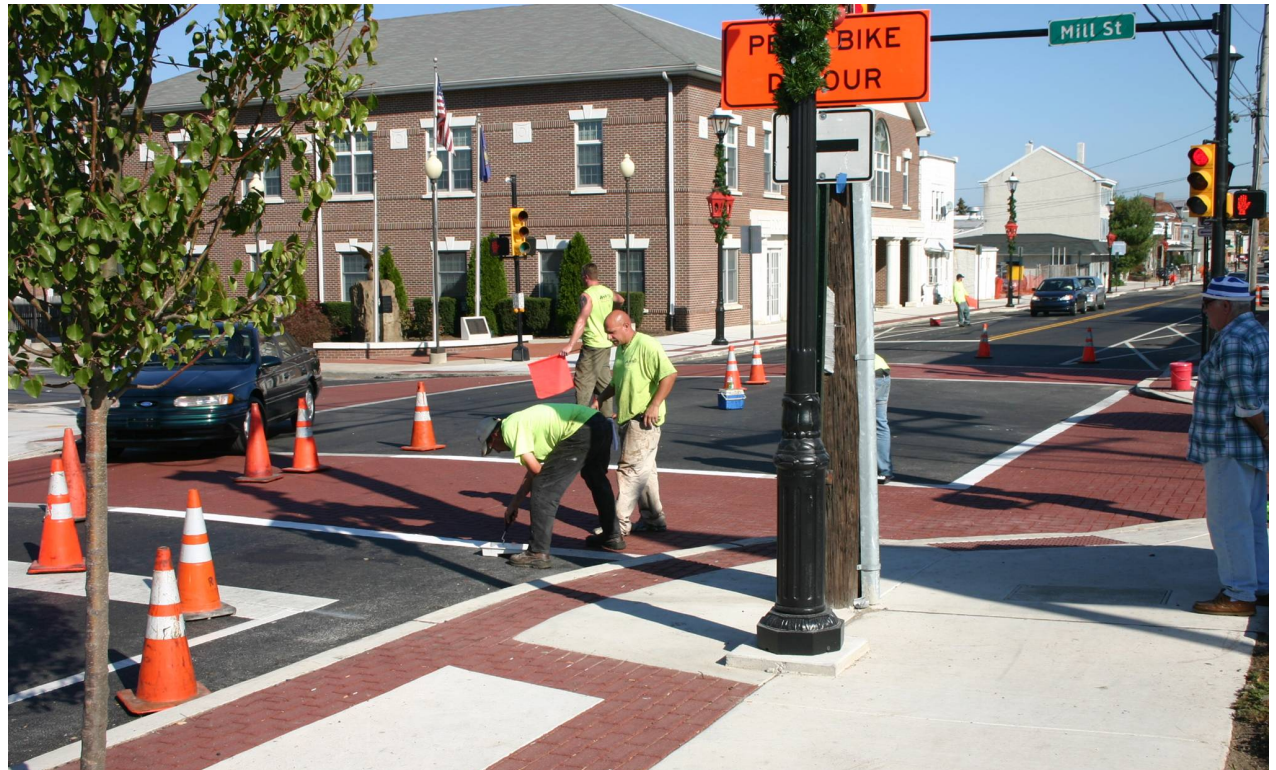
*Inlaid thermal plastic also comes in different color options, although white is still best for visibility and the only color allowed on PennDOT roads.*



**Patterned Surface Dressing.** While inlaid thermal plastic crosswalks have a more unique look, a patterned surface dressing on asphalt is more likely to mimic a traditional brick or cobblestone paver design. PennDOT has specifically allowed a version of this type consisting of a modified polyurethane resin-aggregate mixture. The mixture is applied as a layer less than an inch thick directly into the roadway asphalt. Patterns and textures can then be applied to the area.

**Maintenance.** Both decorative asphalt techniques have relatively low maintenance needs. They should hold up to vehicular traffic and general wear to the same degree as the asphalt in the roadway. If part or all of the crosswalk needs to be removed, the crosswalk can be replaced with virtually no detection between original and reapplied areas. However, replacement costs can be expensive and municipalities should consult with utilities before removal to determine who will be accountable for reinstallation. The primary maintenance responsibility for a municipality is routine cleaning via power spray to keep the colors bright and visible for drivers and pedestrians.

**Other Options.** Municipalities that are installing decorative crosswalks at intersections of roads not owned by PennDOT may still use pavers made out of stone, brick, or concrete. These can be the most attractive and more traditional looking design options, but cost and maintenance is increased versus the modified asphalt



*Patterned surface dressing has been applied above. It is a thin layer of aggregate that is applied directly into the roadway's asphalt surface and resembles a brick paver pattern. The painted white lines bordering the crosswalks are required on PennDOT roads. They increase visibility for vehicles approaching the intersection.*

*The crosswalk on the right is made with stamped asphalt. It is less visible to approaching traffic without a brighter color to border the brick colored walking area.*





choices above. Higher PSI ratings for pavers in crosswalks, as opposed to sidewalks, are a necessity so most paver types will be very durable. However, their strength also depends on the quality and complexity of the subbase and subgrade levels beneath them.

Stamped concrete has also been installed, but the other choices come more highly recommended. Any concrete is subject to cracking and the repair of stamped concrete is difficult as discussed in the sidewalk section.

## Medians

Medians are best utilized when they can incorporate paved and unpaved areas with landscaping and offer a refuge for pedestrians crossing busy streets. An elevated median can also contribute to greater safety for pedestrians as well as vehicles. However, it can be appropriate to designate a median area with decorative paving when that area also functions as a center turn lane. Some municipalities have started installing patterned surface dressing, onto a center lane. It is a low cost way of decorating an otherwise plain area of the roadway.

Some types of stamped asphalt might also be acceptable for a median area. However, durability is an issue with treated or stamped asphalt depending on the level of traffic using the median as a turn lane. Sealants and coatings can wear off of stamped asphalt relatively quickly as use increases.

*These two examples give character to an underused portion of the roadway. Landscaped medians are more attractive, but this alternative does allow for the space to still be used as a center turn lane. The example below uses both a landscaped median and decorative paving.*





## Plazas

Plazas and any other outside public gathering space in the context of a downtown can be a fine opportunity to incorporate decorative paving. However, great attention should be paid to the overall design scheme to keep a plaza from becoming too cluttered with different pavings, plantlife, and furnishings. A good landscape architect is recommended to create an attractive and functional design. Plazas often become landmarks and sources of pride to a community when done right.

The actual materials available for the surface area of a plaza are identical to the options discussed for sidewalk area installations. However, the advantages and disadvantages in a plaza context shift in some cases.

Surface load-bearing ability should be considered based on the anticipated use and features of the plaza. Pedestrian traffic should be accommodated at any use level, but the need for heavy machinery to traverse the plaza to treat vegetation, for instance, should be considered.

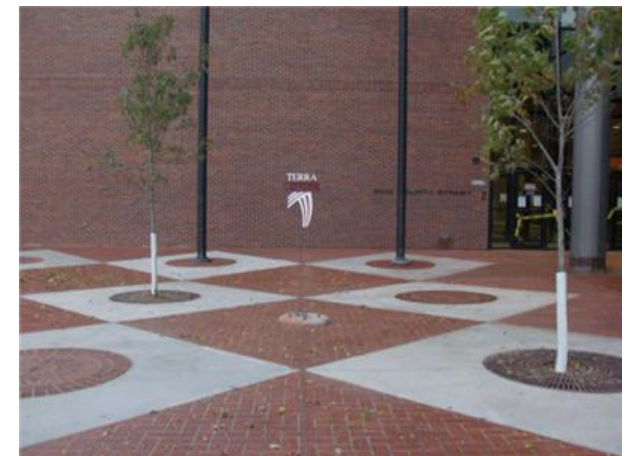
Stone or granite pavers could be considered due to their attractive look and long lasting durability. It's easier to justify a more costly material in the limited area of a plaza as compared to blocks of streetscaping. However, the walking surface can be more critical in a plaza as opposed to the verge between a sidewalk and the curb. Slippery surfaces should be avoided, especially in wet conditions.



*These are two examples of decorative paving used in urban plazas. The plaza on the right actually doubles as a side street when not closed for an event.*



*This pedestrian walkway appropriately uses concrete slabs on its surface. The concentration of decoration used above the surface (trees, furnishings, period lights, etc.) defines the place. An intricate paving pattern would make the scene too busy.*



*This plaza uses a bold paving pattern. However, it fails at creating a comfortable or intimate pedestrian environment.*

## Graffiti

Any hard surface can become an instant canvas for someone with a spray can.

Fortunately, many communities in Montgomery County are not faced with the plague of graffiti that affects larger urban centers, but it is still just as critical to address. Even a small amount can inspire others to add their “stamp” so responding within 24 hours is ideal.

Some municipalities have put graffiti action programs in place to establish an effective system for dealing with the problem. The following are recommended components:

- Provide and promote an easy way for the public to report graffiti.
- Police departments are usually the best body to administer the program, although public works or maintenance staff will be involved with removal.
- Property owners should be held accountable for removal on their premises, but a municipality may choose to address removal on facades facing the right-of-way.
- Invest in power washer and appropriate chemical removal, but make tools available for property owners to borrow or use at low cost.
- Etching of glass has become more popular. Transparent protective film should be applied to any public glass surfaces. It is much cheaper to replace the film than the glass.

## Graffiti Removal Suggestions

Surface Type	Removal of Spray Paint and Similar Materials (markers, shoe polish, lip stick, stencils, etc.)
Fiberglass	Paint remover (sparingly); rinse with water
Glass	Razor blade to scrape off; can also use paint thinner
Masonry (includes brick, marble, stone, tile, granite, and concrete)	Power washing with low pressure; sand or soda blasting (may create a shadow); paint remover or chemical graffiti remover/solvent applied with brush and rinse with water; paint over
Metal	Paint thinner or chemical graffiti remover/solvent and rub with steel wool or sandpaper and rinse; power washing; paint over
Pavement	Chemical remover and power washing; soda blasting
Street Signs	Chemical remover (make sure it does not remove reflective coating)
Stucco	Paint remover/chemical remover and rinse with pressure wash; paint over
Utility Boxes	Chemical remover with cloth or scrubber
Vinyl Siding	Chemical solvents sparingly as they may remove the vinyl coating; repaint with primer first
Wood	On painted, unweathered wood can try mineral spirits; power washing with low pressure; sanding; repainting
Other Similar Issues	Etching may be repairable on some glass with professional help; otherwise replace glass. Adhesives can be scraped away as much as possible; use nail polish remover or acetone-based cleaner to remove remaining residue. Acetone-based solvents can soften plastics.

### Notes:

- When painting over graffiti, color match the paint to the original surface color. If this can't be done, the entire surface may need to be repainted.
- Use special care when using chemical-based removers, as frequent use may be a health hazard to some. Skin and eye protection should be paramount.
- There are alternatives to sandblasting, which include using ground walnut shells, baking soda crystals, dry ice, or ground rubber as the blasting medium.
- Protective coatings, both permanent and sacrificial (which washes off with graffiti removal), may also prove useful.

*The above information is reprinted from the Graffiti Hurts® Program. More information is available at [www.graffitihurts.org](http://www.graffitihurts.org).*



# Part 2

## Vegetation

Montgomery County's communities spend much time and money to plan (and plant) beautiful landscapes - but don't always follow up with the steps to properly install and maintain these areas in the years that follow.

This chapter addresses the steps that municipalities should take when installing and maintaining both new and existing landscapes. Trees and downtown landscapes are important for so many reasons, ranging from their aesthetic qualities to their environmental benefits. In our county's downtowns, trees buffer pedestrians from passing vehicles, provide shade, enhance economic opportunities, increase property values, reduce sounds, dust, and odors, and may even make for a safer and more relaxing driving experience.

However, these qualities don't come for free, and trees are a significant investment worth protecting from damage or disease. The maintenance of downtown streetscapes is an on-going process – and the advice given here on topics like planting, pruning, watering, and weeding will hopefully go a long way toward keeping the county's downtowns green.

**This part discusses the following:**

- Planting New Trees
  - Pre-Installation
  - Design Considerations
  - Installation
  - Post-Installation Care
  - Maintenance of Trees
- Shrubs
- Grassy Areas and Perennials



# Planting New Trees

## Pre-Installation

One of the first things to do before beginning a planting project is to assess any potential planting sites. Major considerations include soil conditions, sun and wind exposure, nearby human activities, drainage, and space constraints. See the *Important Factors for Site Assessments* on the right for more information. Only after this is completed should a list of preferred native and hardy plants be prepared. Having the site analysis in hand will help greatly in finding the trees that will best fit the characteristics of the planting area(s).



## Important Factors for Site Assessments

### Soil Conditions

Soil amounts and quality do hinder planting success, especially in urban areas where topsoil is frequently disturbed and often is shallow, compacted, and/or subject to drought. Soil tests for fertility, salinity, and pH (alkalinity or acidity) would determine how to improve poor conditions with fertilizers or soil amendments.

### Exposure

Most woody plants require full sunlight for proper growth and flowering; few grow well in dense shade. Wind exposure can dry out soils, damage branches and leaves, and uproot newly planted trees without full root systems.

### Human Activity

The top causes of tree death - soil compaction, under-watering, overwatering, vandalism, and planting the wrong tree - are the direct result of things people do. These account for more tree deaths than all insect and disease-related tree deaths combined.

### Drainage

Poor drainage removes the oxygen available to a tree's roots, eventually killing the tree. Before planting, dig test holes 12 inches wide by 12 inches deep in the potential tree planting areas. Fill the holes with water; if it takes more than 6 hours to drain, there may be a drainage problem.

### Space Constraints

Many factors limit the planting space available to the tree: overhead or underground utilities, pavement, buildings, other trees, and visibility (for starters). Make sure there is adequate room for the tree you select to grow to maturity, both above and below ground.

## Design Considerations

Designing a tree's planting area is crucial for sustaining a tree's growth for years to come.

- In urban tree planting areas, it is common to have inadequate soil volumes for proper root growth, since space is usually limited. Tree roots frequently reach well beyond the spread of the branches, and if hampered by pavement or buildings, the tree will grow poorly and frequently dies prematurely. Trees that do survive may uproot the sidewalk and create pedestrian hazards.
- The minimum tree planting area per tree should be 4x4 feet (or the equivalent area) and no deeper than the root ball (about 3 feet). However, this only provides about 50 cubic feet of soil volume. Ideally, there should be 300-400 cubic feet of soil volume available for root growth. This may be difficult to achieve in many urban streetscapes, but additional volume can be achieved by extending the soil area beneath the surface around the exposed planting area. In short, tree planting areas should be as large as possible.
- Where possible, tree planting areas should be contiguous to the curb and located away from potential conflicts like bus stops, fire hydrants, or street signs.
- Consider overhead wires and underground utilities when choosing tree species and designing planting areas.
- Structural soil is often used in planting areas that extend under sidewalks to

## Recommended Tree Species

This is a general list of widely adapted urban tree species. Each of the recommended species has its own particular management needs and adaptability. Some of the species have greater tolerance for prolonged periods of drought, others a greater tolerance for road salt. Some species need additional pruning to make their form into a vehicle or pedestrian-friendly one. Also consider site-specific factors such as building proximities, overhead wire interference, and the distance to the nearest travel lane, before selecting a tree that will best suit the conditions that surround it. Trees native to this region are noted as such.

*Note: Trees should be a minimum of 2.5" caliper at the time of planting. Larger caliber trees will require more water and maintenance.*

### Selected Trees Small to Medium (Up to 40 ft. height)

Scientific Name	Common Name
Acer buergeranum	Trident Maple
Acer campestre	Hedge Maple
Carpinus betulus fastigiata*	Pyramidal European Hornbeam
Cercis canadensis	Eastern Redbud
Chionanthus retusus	Chinese Fringetree
Cornus mas cv. Spring Glow	Spring Glow Cornelian Cherry Dogwood
Crataegus viridis cv. Winter King	Winter King Hawthorne
Malus spp. Centurion®, Centsam	Flowering Crabapple
Parrotia persica	Persian Parrotia
Prunus serrulata 'Kwanzan'	Kwanzan Asian Cherry
Syringa reticulata*	Japanese Tree Lilac

\* = Columnar trees with narrow canopy for tight situations between buildings and roadways

### Selected Trees Medium to Large (30 ft. to more than 50 ft. height)

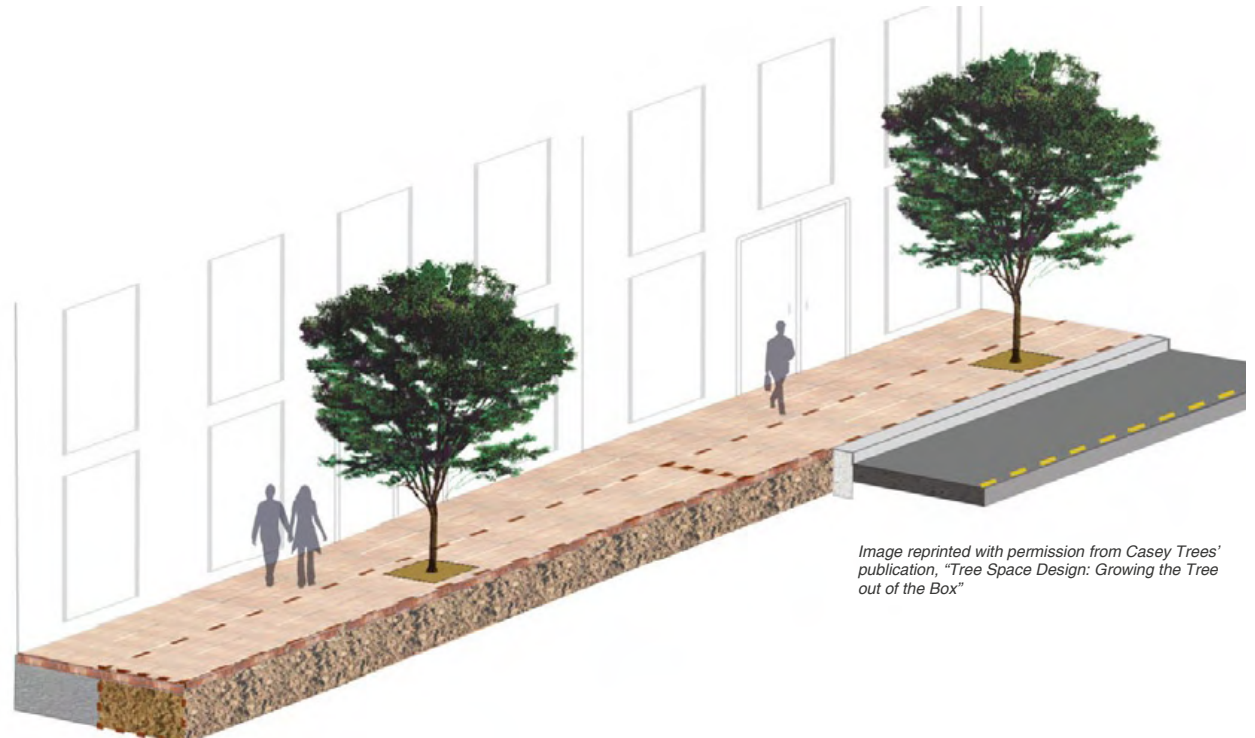
Scientific Name	Common Name
Betula nigra*	River Birch
Ginkgo biloba*	Ginkgo (male cultivar)
Ginkgo biloba 'Princeton Sentry'*	Princeton Sentry Ginkgo (columnar male form)
Magnolia virginiana 'Henry Hicks'	Sweet Bay Magnolia cv. 'Henry Hicks'
Platanus X acerifolia 'Bloodgood'	London Planetree
Prunus X yedoensis*	Yoshino Cherry
Quercus acutissima*	Sawtooth Oak
Quercus phellos*	Willow Oak
Quercus rubra	Northern Red Oak
Sophora (Styphnolobium) japonica (um) 'Regent'*	Japanese Pagoda Tree; Scholar Tree
Taxodium distichum*	Bald Cypress
Ulmus parvifolia	Chinese Elm
Zelkova serrata* Green Vase; Village Green	Japanese Zelkova

\* = Tree species best situated to survive with limited root growth areas.



increase the potential area for root growth. Structural soil is a mix of stone aggregate with soil which meets the load-bearing requirements for the subsurface of pavement and sidewalks, though it must be prepared by a professional. The stone/soil mixture provides space for root growth, aeration, drainage, and access to nutrients and water that might not be achieved in compacted urban soil.

- Avoid monoculture. Plant a variety of tree species, rather than just a single species, to minimize damage if one type shows susceptibility to drought, pests, or other site conditions.
- If possible, group plantings together. Continuous tree planting areas can be cut from wide sidewalks and covered with brick or cement pavers. This increases the available soil volume for the trees to grow. A 4-foot wide minimum strip, parallel to the curb and no deeper than the root balls being planted, provides trees with large, shared rooting areas.
- Raised planters or containers are not ideal for trees in a streetscape due to the volume of soil area needed for all but the smallest of trees. However, they may work well for shrubs or perennials. Plazas or parking lots may better be able to accommodate a large enough planter that can sustain typical tree growth. Raised plantings will require more watering and be more susceptible to extreme temperatures than ground level plantings.



*Image reprinted with permission from Casey Trees' publication, "Tree Space Design: Growing the Tree out of the Box"*

*This illustration shows how soil volume can be maximized by extending the planting area beneath the surface. The volume of soil is 400 cubic feet per tree despite only having an opening of 4x4 feet.*



*Raised planters or containers are not a good choice for street trees, but if no other options are available they can work for shrubs, perennials, or very small trees as shown in the above picture.*

## Installation

There are several steps to take to make tree planting a successful venture:

- Dig a shallow, broad planting hole. Make the hole wide, but only as deep as the root ball, so that the roots on the newly establishing tree push through surrounding soil in order to establish. It is also a good idea to flood the pit to check the drainage ability of the site.
- Identify the trunk flare (where the roots spread at the base of the tree), so the necessary depth of the hole for proper planting can be determined.
- Remove tree container for containerized trees (cutting down the sides of the container may make this easier). Inspect the root ball for circling roots and cut or straighten them. Expose the trunk flare, if necessary.
- Place the tree at the proper height and ensure the hole has been dug to the proper depth. The majority of the roots on the newly planted tree will develop in the top 12 inches of soil, but if planted too deeply, new roots will have difficulty developing.
- Straighten the tree in the hole. Before backfilling, have someone view the tree from several directions to confirm it is straight. Once backfilling begins, it is difficult to reposition the tree.



*Designing tree planting areas to be an optimal size is crucial for healthy tree growth, development, and most importantly, tree longevity.*



*If the root ball of a tree is wrapped, like in the photo above, any wrapping material and ties should be removed before planting.*



- Fill the hole, about one-third full, and gently but firmly pack the soil around the base of the root ball. If the root ball is wrapped, first remove any fabric, plastic, string, and wire from around the trunk and root ball to facilitate growth.
- Fill the remainder of the hole, taking care to firmly pack soil to eliminate air pockets that cause roots to dry out.
- Place mulch from organic materials, such as shredded bark, compost, or leaf mulch at the tree's base. Spread 2-3 inches of mulch over the critical root zone. If a cluster of trees is being planted, the entire area can be mulched. However, mulch should not be mounded up against the tree trunk because this will cause the decay of the bark at the tree's base. A two-inch gap between the mulch and the tree trunk should be sufficient.

Recycled rubber mulch, made from shredded tires, is not recommended for mulching, as it may leach harmful chemicals over time into the surrounding soil as well as the local water supply.

- Stake the tree only if needed. Stakes may be necessary for extra support for top-heavy trees or where vandalism or windy conditions are concerns, but some wind and swaying are actually good for proper tree development.



*Mulching is one of the most beneficial things to do for any tree, not just a young one. However, the tree in the top left photo doesn't have any mulch around it, and the trees in the top right photo have too much mulch around their bases.*



*In these planting areas, mulch has been spread evenly across the planting surface, and exposed soil planted with perennials.*



Consider alternative products that work to stabilize new trees below the surface by holding the root ball in place. If you must use stakes, be sure to use a flexible tie material and attach them below the bottom branches. Place stakes (parallel to the curb) in the undisturbed soil beyond the outer edges of the root ball. Stakes should be removed within one year to prevent any damage to the growing tree trunk.

- Utilize tree guards and tree grates as little as possible and only in areas where sidewalks are narrow or tree trunk damage is likely. Tree guards do provide support to growing trees but can easily be damaged, so sturdy guards should be a priority. Care should be taken to remove the tree guard if it interferes with a tree's growth. Tree grates can be used where a continuous walking surface is needed, and should have concentric openings that expand as the tree grows. It is crucial to both install the grate properly and enlarge the opening when a tree's trunk needs more growing space. Alternate ways of covering the tree planting area include mulch, gravel, or flowers and other perennials.



*Tree grates that aren't maintained and widened over time may end up stifling tree growth. This tree grate opening is far too narrow for the size of the above tree.*

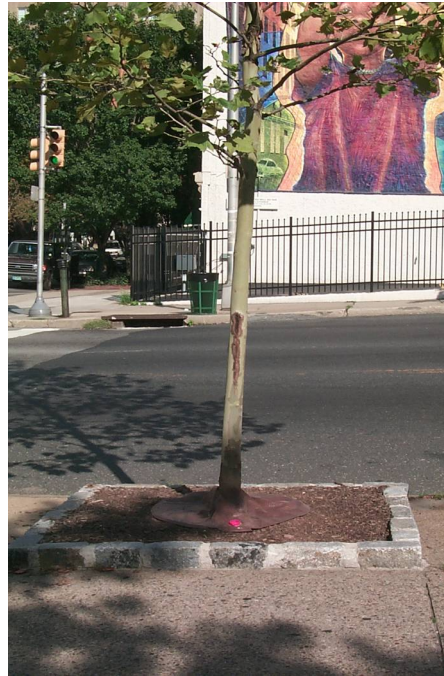


*Tree stakes should be used only as needed, as they can injure trees when used improperly*



## Post-Installation Care

- Water trees regularly when planted and periodically thereafter until the trees are well established. From May through September, trees should be watered weekly during the first few growing seasons. Immediately after planting, the soil around each tree should be thoroughly saturated. After that, water should be applied slowly and uniformly, either with perforated “gator” tree bags or a 5-gallon plastic bucket with several small holes on the sides (though near the bottom). These can be filled by water trucks or potentially by local business owners with a nearby water hookup.
- Weeding is an important undertaking during the first few years of a tree’s growth and should be performed as needed. Don’t use weed whackers or any tools that could damage the tree trunk or roots. Handpulling or using a hoe to remove weeds is the best approach. However, biannual re-mulching may be all that is needed to eradicate most weeds.
- Fertilization may be necessary to add nitrogen to local soils, if soil tests show any nutrient deficiencies. Fertilizer can be put down after planting, but the need for further application during the first two years may vary depending on the tree and its environment. Other



*Watering is the most important thing that you can do for your tree. It may also be the most difficult task to accomplish. Transporting water from the source to the tree is a challenge. The “gator bags” shown on the left are portable drip-irrigation systems which provide a slow release of water. This reduces the chances of watering a newly planted tree too little or too much.*



*Weeding around trees is important for not just the aesthetics of your streetscape, but also keeps trees healthy.*

*Other maintenance tasks may involve making sure tree trunks have sufficient space for future growth and removing garbage from tree wells.*

*This tree, at left, has been ignored long enough so that the tree is clearly stressed.*



factors, such as watering and pruning, may have greater influence on keeping the tree healthy in its early years. If fertilizer is used, it is best applied in the late summer so that it's available for spring growth.

- Pruning is not usually necessary immediately after planting, but may be needed to remove dead or damaged branches. Pruning lower branches as a tree grows does provide ground clearance for pedestrians as well as vehicles. There should be at least 8 feet of clearance over a walkway, and 13 feet of clearance over a local street. Over time, pruning helps promote the long-term health of the tree and establishes good tree structure.

When trees do need pruning, encourage the growth of several large permanent branches that eventually form the basic structure of the mature tree. This means removing branches growing close to or across potential structural branches, as well as large branches that are too low.

Topping, or severely cutting tree branches to stubs or lateral branches that are not large enough to sustain the remaining branch, is not recommended. Topping can remove more than 50 percent of the leaf-bearing crown of a tree, and severely stresses the tree.



*Pruning, when properly performed, is an excellent way of reducing the risk of branch and stem breakage, creating better clearance for passing vehicles and pedestrians, as well as improving the appearance.*

Image from the University of Florida IFAS Extension.

*Tree topping, like in the image on the right, results in damaged and unsightly trees. It is not recommended as a tree pruning technique.*

Image from the UC Davis Environmental Horticulture Research and Information Center



## Maintenance of Trees

- Inspection and maintenance will be necessary once trees are planted. Regularly scheduled significant tasks should take place for at least 3-5 years after the initial planting. A schedule, adapted from the Center for Watershed Protection's Urban Watershed Forestry Manual, is on the right.
- For existing older trees, a hazards inspection is a must. Potential hazards to be on the lookout for include overgrown specimens, dead or damaged branches, deep open cracks in the trunk or branches, fungal growth on the tree roots, and visible hollows and cankers.
- Hiring professionals, though obviously an added expense, is worth the cost. A certified arborist (through the International Society of Arboriculture, local arborists can be found through their website) can help you assess the quality of your currently planted trees, but can also assist in planning, soil testing, tree selection and protection, and setting up the proper maintenance program to ensure healthy trees for years to come.
- Local advocates, such as members of a municipal shade tree commission or environmental advisory council, are resources not to overlook. They can assist with some of the regularly maintenance tasks to keep trees healthy.

### Tree Maintenance Schedule

Inspection and Maintenance Activity	Year One	Year Two	Year Three	Year Four	Year Five and Beyond
Inspect tree health and survival	X	X	X	X	X
Water trees weekly or biweekly depending on season and rainfall.	X	X	X		
Water trees when needed, especially in hot, dry weather				X	X
Remove or replace stakes, if applicable	X				
Remove weeds or invasive species, as needed	X	X	X	X	X
Prune damaged or diseased branches		X	X	X	X
Install supplemental plantings, if needed		X	X	X	X

*Staying up-to-speed with maintenance tasks will go a long way toward keeping street trees healthy. Above is a suggested list of the activities that will keep your streetscape investment looking good for years to come.*



### Pest Control

Especially in urban areas where trees may be under stress, trees can be susceptible to insect infestations, which can injure or even kill a tree. Trees should be inspected annually by a certified arborist who can identify problems caused by insect pests and recommend appropriate treatment.



## Shrubs

Shrubs are a welcome addition to street-scapes, but are more commonly used in gateways, parking lots, and plazas. If planted properly, shrubs require minimal care (though some maintenance is useful in times of adverse weather conditions).

- Pruning can maintain or improve the condition of shrubs, from removing or cutting back older branches to removing faded flowers. Remember that pruning usually encourages new growth near the pruning cuts. For this reason, it is not recommended to prune late in summer. The use of wound dressings is not recommended as it can interfere with the plant's ability to heal. This is true even in the case of large cuts.
- Watering should be sufficient enough to wet the entire root zone and surrounding area. After the initial planting, water shrubs when the soil begins to dry out. An inch of water weekly is best for newly-planted shrubs. Thorough soakings administered less frequently are better than light waterings given more frequently. Once established, most shrubs need supplemental watering only during periods of drought.



*Parking lots, plazas, and pathways are excellent places to plant shrubs. Not only do they provide eye-catching greenery, but they also can be used for stormwater management infiltration areas.*



- Mulching around the base of shrubs helps retain moisture, control weeds, and moderate soil temperature. Mulch should be applied so that when settled, it is 3-4 inches deep. As with trees, keep mulch away from the shrub's trunk or stem, as it can rot the bark. Landscape fabric or plastic should not be used with organic mulches.
- Inorganic materials, such as landscape rocks, can also be used for mulching. However, rock tends to absorb heat during the day and release it at night, which may stress plants. Landscape plastic or fabric should be used under rocks to control weeds.
- Fertilizer should be applied in the spring, sufficiently before the colder winter months. Many flowering shrubs also produce flower buds in mid- to late summer; so applying fertilizer at that time may cause more vegetative growth and fewer flowers.



*Shrubs work in a variety of settings, from busy downtown corridors to quiet shady walkways, to add a softer look to a streetscape, to provide a barrier between cars and pedestrians, or even to provide a simple ground cover to discourage littering or careless pet owners.*



*Here, the combination of trees, shrubs, and flowers makes an otherwise plain alley into a shady, inviting spot to shop and spend time.*





## Grassy Areas and Perennials

Grassy areas are less likely to be an issue in more urbanized areas, although there are small lawns or landscaped areas integrated into some local parks and plazas. This section is meant to just cover the basics - more intensive care techniques may be needed for larger spaces.

- Seeding should take place in late summer or early fall. New seedlings are generally more successful in the relative coolness of fall and spring before the summer's heat.
- Fertilization helps maintain healthy turf areas. Soil testing may be necessary to determine the right type of fertilizer to apply. A fertilizer application in mid-spring and again in late summer will likely be sufficient.
- Mowing should take place regularly as long as the grass is still growing. Most lawns should be cut at 2 inches or above; clippings need not be removed as long as the mowing happens regularly.
- Weeds can be controlled in several ways. Annual weeds, like crabgrass, should be sprayed with preemergence herbicides applied prior to weed germination (in early spring). Broadleaf weeds, like dandelions, should be



*Grassy spaces, whether as part of a lawn or just as part of an overall planting scheme, add color to downtown areas and other open spaces. Maintenance needs are fairly minor, although weeding and mowing should take place as necessary.*



sprayed with broadleaf herbicides when weeds are actively growing (either in the spring or fall).

- An easy thing to do to keep a perennial planting looking good is remove faded flowers from the plants. This is a pruning practice commonly called deadheading, as in removing dead flower heads. This keeps plantings looking tidy and it encourages repeat blooming perennials to indeed bloom again.
- The top growth of most perennials will die back after the first hard frost hits. At this point, you can cut back the dead stems leaving the bottom 2 or 3 inches.
- Plants that provide winter interest, such as ornamental grasses, should be left through the winter. Winter mulch, such as compost, straw, or shredded leaves, can be applied to late summer and fall-planted perennials.
- If perennials are growing in containers, most will benefit if the containers are moved to a protected area such as an unheated garage or shed. The plants should remain cold but not so cold the roots freeze. Check the pots every three weeks or so and water as needed so the soil doesn't dry out.



*Flowers and other perennials add variety and vibrancy to downtown landscapes.*





# Part 3

## Street Lights and Furnishings

Street lights and street furnishings are some of the most noticeable installations that communities provide. These features frequently define the quality of the streetscape to visitors and passersby. Because of their high profile and the potential for wear and tear, the design and placement of street furnishings should be carefully considered and will be the primary focus of this section.

The maintenance of street lights and street furnishings revolves around the physical upkeep of the improvements and addressing damage from the environment. Regular inspections and replacement of worn out parts, especially with lights, is probably the most common maintenance activity.

**This part discusses the following:**

- Street Lights
- Street Furnishings, including:
  - Bus Stops and Shelters
  - Benches
  - Waste Receptacles
  - Public Art
  - Bicycle Racks
  - Bollards
  - Wayfinding Signs

## Street Lights

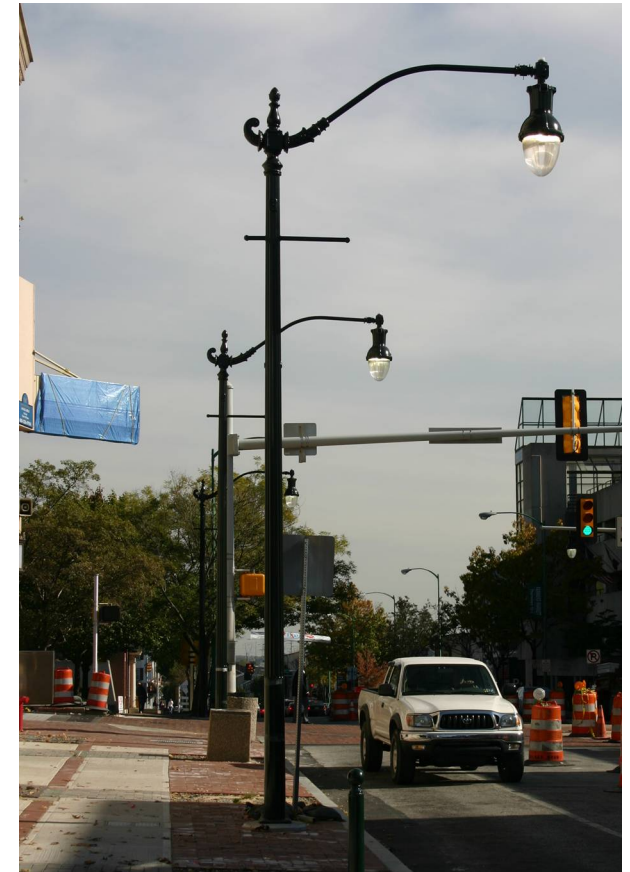
The most important purpose of street lighting is nighttime visibility for security and safety. However, street lights can also be the unifying element in a streetscape design. Street lighting enhances community safety and appearance, and creates a more intimate and inviting environment where people want to visit.

Municipalities are encouraged to think broadly when choosing street lights. The key to developing a good lighting plan is to relate lighting to the evening activities of a particular place. A successful street lighting plan takes into account not just vehicular traffic but also pedestrian activity. For instance, one way to emphasize pedestrians is to utilize smaller-scale, more frequently spaced fixtures geared to pedestrians. Also, lighting should be thought of and utilized in terms of how the type, placement, and illumination will be perceived and used by pedestrians.

### General Considerations

Certain principles must be taken into consideration when choosing street lights. It is important to begin with the community's main objectives, which should include the following:

- Improve the function of activity centers or attractions in the urban landscape.
- Facilitate the safe movement of pedestrians and vehicles, as well as promoting a more secure environment.

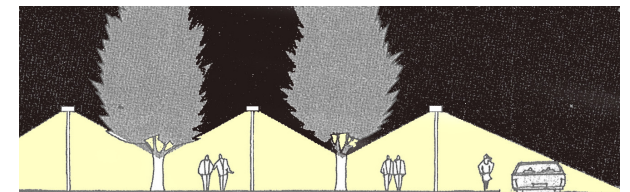


### Orientation, Scale, and Intensity

Lighting should be designed to support both pedestrians and vehicular traffic. This can be done most effectively by creating a lighting hierarchy based on the uses within the lit area.

In downtowns and main street areas, lighting along sidewalks should have an orientation and scale that allows pedestrians to comfortably walk from one location to another and to interact with the built environment at the speed a pedestrian would travel. Lighting should not overwhelm the environment—some pedestrian street lights look like airport landing zones—nor should the lighting create pockets of darkness.

The end result should produce a rather even and uniform lighting of the sidewalk and street cartway area that serves the safety needs of pedestrians and vehicles while maintaining a comfortable ambiance.



- Minimize the potential for personal harm, and damage to property. Involve law enforcement when developing a lighting plan.
- Reveal important features in a place at a desired intensity of light in order to encourage nighttime use.

Cost is also an important consideration that can influence the choices in street light design and the types of materials used. If designing new lighting for corridors along state highways, consult with PennDOT early on in the process to determine if they will have any concerns.

## Design Considerations

Once goals are fixed, several concerns with regard to design should be taken into account:

- Scale, such as the width and classification of a roadway or size of a sidewalk, is frequently an issue. For example, a more vehicle oriented design scheme might include 20' to 35' light posts, spaced at 125' to 150', staggered on either side of the street. An alternative to this is to reduce both the height of the fixtures and the distance between them. This creates a more intimate setting for pedestrians along the sidewalk.
- Questions about safety and energy efficiency may require the elimination of light trespass and glare by utilizing reflector system lighting and cutoff optics.
- Aesthetics are also important to consider and street lights and street furniture should

## General Categories of Light Fixtures



**Bollard Lights**

- Used in walkways, often connecting parking lots and streets
- Low-level lighting
- Generally less than 6 ft. high



**Pedestrian and Street Lights**

- Used along sidewalks for pedestrians
- At proper spacing, can also be used for street illumination in urban and commercial settings
- Medium level lighting
- Generally 10 to 15 ft.



**Plaza and Parking Lot Lights**

- Used where greater illumination may be needed for public safety
- Higher level lighting
- Generally 15 to 25 ft., but best limited to 20 feet when possible

## Lighting Safety Issues

**Glare** - Light that hits users directly which can temporarily impair vision at inopportune times, such as when driving.

**Light Trespass** - The unwanted intrusion of light into properties adjacent to the lighted area. This can really be a problem on main streets with second floor residential units if light is not deflected away from the windows.

Fortunately, lighting technology has made it easier to address these problems. Luminaire location and mounting height, fixture type, and lamp intensity must be carefully selected to optimize light distribution and minimize glare and trespass. Cutoff optics should be used to reduce glare and direct the light to where it is needed. Overlighting will saturate an area with too much light so as to make it uncomfortable and underlighting will not provide enough light and creating a dangerous environment. Ask your manufacturer if they are willing to provide a lumen plan to show light intensity readings after installation throughout the district. Some may be willing to do this free of charge.



stay within the same design theme. For instance, whether the municipality chooses a Victorian or a colonial theme, this theme should be represented in all street furniture (including the lighting). Color choice can also vary. Black is a simple and popular choice. Some municipalities, such as Phoenixville in Chester County, have chosen a distinctive color for its lampposts. This helps with community identity but may also create controversy.

### Installation Considerations

The following suggestions may help avert future problems or costs down the road:

- Avoid gaps between the base and anchor bolts to keep pests, such as bees, from making a home in the light pole.
- The ballast, which regulates the current in gas discharge lamps, can sometimes be located in the top of the light fixture rather than the pole base. The fixture location could be better since it may be more difficult for crews to remove the heavy fixture and access the pole base.
- Consult with PECO on the installation of lights. Individual taps into the power source will be charged an annual fee for each tap. You may be able to daisy-chain lights together and put up to eight lights on the same tap.
- Consider putting electrical receptacles on the light poles to facilitate holiday lighting.



### Light Pole Materials

Cast iron decorative light poles offer superior performance and durability compared to aluminum poles. However, maintenance of iron poles is more critical as uncoated iron surfaces will show rust, as seen in this picture. Rust can be removed by sanding and repainting the surface. Aluminum will not rust, but it is more susceptible to damage. Fiberglass is a third type of pole material, although it is less common in urban streetscapes. Like aluminum, fiberglass is a lighter and cheaper alternative to iron and requires little maintenance. However, it is less durable and can crack over time. Fiberglass may be considered in areas that are less likely to encounter damage from vehicles, utility equipment, or vandalism.

### Decorative Street Light Poles - Aluminum vs. Iron Comparison

	Aluminum	Iron
Durability	The ability to cast very thin walls is the very factor that can make aluminum unsuitable for some applications, especially where multiple luminaire arms or banner arms are to be used.	Iron is considerably harder than aluminum and does not lend itself to physical damage as readily. It is very difficult to dent, gouge or scrape.
Surface Appearance	In benign environments, aluminum has an aesthetic advantage over iron in that marred surfaces will not show rust. However, aluminum is thinner and more prone to damage.	Uncoated iron tends to form a surface oxidation, or rust, that acts as an effective barrier to further corrosion and while not aesthetically pleasing, structurally, iron will last for decades. Sanding and repainting the damaged area will restore the pole to its original look.
Design Life	A central characteristic of aluminum alloys is that over time they tend to age harden which causes the aluminum to become brittle and accounts for its design life of between 20 and 30 years.	Cast iron products that have been in use for over 100 years in this country are common and with the maintenance of finish coatings will last almost indefinitely.
Cost	Initial costs for aluminum poles are less than iron. Aside from the material cost, installation may also be cheaper as the unloading and setting of aluminum can be done by hand, whereas iron is very heavy.	Iron will cost more up front than aluminum. However, it may be less expensive over the long term since iron poles shouldn't need to be replaced for a much longer time.

- Regardless of lighting and materials choices, be sure that contractors follow National Electrical Code regulations when installing lights. This reduces future maintenance problems. Municipalities should also receive a Developers Inspection or Electrical Underwriters' certification of all installations. This should ensure proper installation.

## Maintenance

Most outdoor lighting maintenance issues concern proper installation, the type of lamps used, and the design and type of lamppost material chosen. The tables on the preceding page and to the right give an overview of pole material and lamp options. Consider the following when planning for maintenance on street lights:

- The biggest threat to street lights are vehicles knocking them over. Depending on the type of street, it is a good idea to purchase a few extra poles and fixtures so that they are on-hand and can be used to replace "knockdowns". Otherwise, it may take weeks to get a replacement from the manufacturer. You may also want to install a wire pull box with each pole in order to more efficiently repair wire tears with a knockdown.
- Light poles and fixtures should be inspected annually. Lamps should be replaced promptly to ensure public safety. Other parts, such as ballasts, fuses, and photocells, will eventually need to be replaced as well.

## Types of Lamps Used in Streetlights

<b>Incandescent</b>	Least efficient, oldest type; superior color rendition and a warm white appearance; short lamp life.
<b>Fluorescent</b>	Used since the 1950s; more efficient than incandescent; require less maintenance; downtown areas and parking lots; good for a lot of light over a large area; for optical control, use a more compact shape; good color rendition.
<b>Low Pressure Sodium (LPS)</b>	The most efficient light source used in street lighting but depreciates over lifetime; drawbacks include poor color rendering and optical control, an intense yellow glow, and it uses more wattage as the lamp ages but does not lose its luminosity.
<b>Mercury Vapor</b>	As efficient as fluorescents; subject to lumen depreciation.
<b>Metal Halide</b>	Good quality white light; most commonly found in parking lots and inside commercial and industrial buildings.
<b>High Pressure Sodium (HPS)</b>	Commonly used in street lights around US; superior optical control, superior life and very low maintenance; broad application if color is not a concern; more energy efficient than mercury or metal halide lamps; give off an amber color, have no problem with color shift and last for long periods of time. These lamps require an external ballast to operate.
<b>Induction Lamps</b>	Have a light quality similar to fluorescent but with a significantly longer average rated life (up to 100,000 hours), and with almost no sensitivity to ambient temperature.

## Summary of Lamp Characteristics

Lamp	Wattage Range, M(ft)	Efficacy, Lumen/Watt	Average Life, Hrs.	Apparent Color	Color Rendering	Initial Cost of Equipment
<b>Incandescent</b>	3-300 (10-1000)	10-25	750-2000	Warm white	Best overall	Low
<b>Fluorescent</b>	4.5-64.5 (15-215)	40-80	7500-15,000	Warm to cool white	Good	Medium
<b>Induction</b>	16.5-25.5 (55-85)	63-70	100,000	White	Very good	High
<b>Mercury Vapor (deluxe white)</b>	12-300 (40-1000)	25-60	24,000	Cool white	Good	Medium
<b>Metal Halide</b>	52.5-450 (175-1500)	65-105	7500-20,000	Cool white	Very good	Med. to High
<b>High Pressure Sodium (HPS)</b>	10.5-300 (35-1000)	60-120	—	Orange-yellow	Poor	High
<b>White High Pressure Sodium</b>	45-75 (150-250)	75-80	—	Warm white	Very good	High
<b>Low Pressure Sodium (LPS)</b>	5.4-54 (18-180)	70-150	—	Intense yellow	Very poor	High

Source: *Time-Saver Standards for Landscape Architecture, Second Edition.*



## Street Furnishings

Street furniture is available in a variety of material types that will need differing degrees of maintenance. The following guidelines will summarize the materials, design, strategic placement and maintenance of various forms of street furniture.

### Broad Guidelines

Transportation networks should support pedestrians, transit and a community vision, rather than simply providing automobile throughways. Streetscapes should reinforce local distinctiveness and improve the image of the community. Well-crafted street furniture in the appropriate places can help reinforce local identity. Materials and workmanship are important, as is regular inspections, cleaning, and timely repair.

When designing plans for a streetscape, do not clutter materials, and always coordinate the design. Municipalities can reduce clutter by fixing signage to existing features where appropriate or using street furniture creatively to perform multiple functions, for example bollards to hold signs and benches to function as bollards.



*Placement of benches and or trashcans should coincide with other types of furniture and facilities and conform to the same design theme.*



## Bus Stops and Shelters

In deciding whether or not a bus shelter is needed, consider areas where large numbers of passengers embark and disembark, especially where there are stores, offices, and other uses with a lot of foot traffic.

Guidelines for choosing and locating bus shelters include:

- Set back from the crosswalk at intersections 10 feet or 40 feet (at far side of intersection)
- Allow 3 feet between bus shelter and curb.
- Match the design of other street furniture.
- Mount side panels three inches off the ground so that debris will not collect inside the shelter.
- Use a pitched roof to prevent the collection of rain, snow, and debris.
- Leave 8 feet of sidewalk width between bus shelters and buildings.

For durability, bus shelters should be composed of structural members and inset panels, not snap-together “curtain walls” or decorative sections that are easily vandalized. In general, a steel structure is best. Wood is not as durable and concrete tends to discolor and soil easily. For flexibility, shelters should be installed via bolted attachment rather than by casting in place.



*Bus shelters should be well lit, and comfortable. This includes the provision of shade trees and nearby trash receptacles.*



### Bus Shelter Material Selection

- There should be few movable parts, and materials should be vandal, graffiti, weather, salt and rust-resistant.
- A graffiti film can be used on shelter panels that resists scratching and is easily removed and replaced.
- A protective finish can also be applied to steel in cases where salt damage is severe.
- Herculite glass side panels are strong, easy to clean, and resist scratching. Plastic or plexiglass is not recommended as it tends to discolor and scratch easily.

## Benches

Benches provide a needed place for rest and relaxation and can help create a pedestrian-friendly streetscape. The primary purpose of a bench should be convenience and comfort, however this is sacrificed when benches are uncomfortable or located in places where they are underutilized.

Evaluate where seating exists and where people sit, such as steps or ledges, as these might be good bench locations. Note the land uses along the street (shops, offices, etc.), and the potential clientele (workers, shoppers). This will help determine which kind(s) of benches are needed.

Some of the best locations for benches include places where people wait for rides or public transit, outside stores and office buildings, near restaurants, and in public parks.

In addition:

- Benches should be placed within view of the action, but out of the way of the flow of pedestrian traffic.
- Benches should be put with other street amenities such as bus shelters, kiosks, newsstands, or waste receptacles.
- Benches should be located in both sun and shade, as well as where there is protection from strong winds.
- Benches should be spaced so that wheelchairs can be accommodated on the side or in front of the bench.



*Place benches where people are more likely to sit: bus shelters, retail areas, or busy sidewalks.*



## Planning for Benches

Common mistakes made during the planning process:

- “More is better” approach
- Placing benches at regular intervals along a street and not considering adjacent land uses and other amenities along the street

To avoid these common mistakes, ask the following questions before choosing and placing benches in a landscape:

- Are more benches needed?
- Where should they be located?
- What is the right type of bench?
- How will they be maintained once they have



Some sources feel location is best decided by installing one bench for each 600 feet of road frontage or every 250 feet of storefront.

Bench design should correspond to the design of existing street furnishings. The design of benches should address several factors:

- For comfort, there should be a 95-105 degree angle between the seat and the back, and the seat should be between 2 and 10 degrees off of horizontal.
- Seat depth should be 12-18 inches for benches with backs and 30 inches for backless benches. A seat height of 18 inches is generally most comfortable.
- The front edge of the seat should be curved rather than squared off.
- Wood seating is the most comfortable; it is resilient and does not readily conduct heat or cold.
- Small bench slats (2 inches) spaced closely together and following a contoured form are generally more comfortable than larger slats (8 inches). However, in areas where vandalism is a factor a larger size should be used.
- The length of the seat should allow for twenty-four inches per person. However, people will sit closer to each other if there is an armrest separating them.



*Benches should be put with other street amenities such as bus shelters, kiosks, newsstands, or waste receptacles.*



- Center arms in the middle of a bench might be desired in some places in order to prevent people from lying down on the bench and sleeping.

Benches should be constructed of durable materials that are resistant to weather, vandalism, and rusting. Benches can be made of concrete, wood, iron, steel, recycled plastic and fiberglass. If wood is used, slats are the parts that are most often replaced. Stockpile slats, or choose a bench manufacturer with slats that can quickly be reordered.

Painting slats and supports requires time and funds. Some ways around painting are: using aluminum for supports; galvanizing steel supports before painting; staining instead of painting slats; and using concrete (such as in concrete standard or wall hung benches) to avoid corrosion or rust. Using slats that are the same size aids in replacement and labor costs. Slat replacement can be made easier by the way it is attached to the bench structure and tradeoffs may need to be considered between ease of replacement and frequency of replacement. For example, a rod through a contour bench requires more time to be replaced than using bolts directly to the bench structure. However, the rod attachment is stronger and so it does not have to be replaced as often as using bolts.



*Wood seating is the most comfortable. It is resilient and does not readily conduct heat or cold.*



*Small bench slats (2 inches) spaced closely together and following a contoured form are generally more comfortable than larger slats (8 inches).*

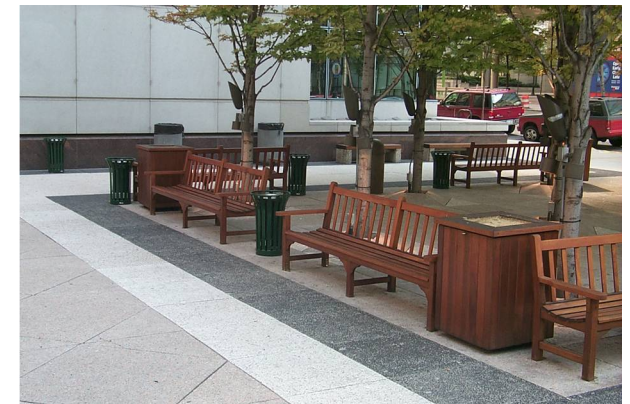
## Waste Receptacles

Waste receptacles provide needed repositories for trash and recycled materials, keep streets cleaner and can be attractive street furnishings. As a general rule, two to four waste receptacles per block on a downtown street is generally sufficient. Place one at each end of the block next to the crosswalk, and one or two more in the middle of the block if there are benches or take-out food shops. They should be compatible with other street furniture and always be very clearly marked. Recycling cans should be placed near the waste receptacles.

A well-managed public space will always have smaller receptacles that are emptied often rather than one large receptacle that is not frequently emptied. In most areas, a 30 to 50 gallon container is adequate.

To be durable, materials should be graffiti, fire, rust, and stain-resistant. Some characteristics of commonly used materials are below:

- **Enamel** - graffiti and stain-resistant, but some types chip easily.
- **Wood and rough textured or porous surfaces** - rust and stain-resistant, but are subject to vandalism and difficult to clean.
- **Aluminum** - generally a good material, but may be vandal-prone as scrap metal.
- **Solvent-sensitive plastics** - can be problematic, especially in parks, where barbecue lighter fluids can get put into the can.



*Design waste receptacles and recycling bins to be compatible with other street furniture and with the architectural character of the area.*



- **Galvanized steel** - a highly durable material suitable for places where receptacles may get heavy abuse.

Trash cans should have liners to prevent leaking. A metal or plastic liner with disposable, heavy duty, inner plastic bag is best. Plastic liners are easier to clean but are flammable. Metal liners are best in parks where barbecuing is common.

There are innovative programs that may be feasible in our local communities. The cities of Denver and Philadelphia have both contracted out the responsibility of maintaining and servicing waste receptacles in certain areas of the city. Philadelphia has also started installing 500 new solar powered self-compacting waste receptacles. New York has implemented an “adopt-a-basket” campaign to encourage private business owners to provide maintenance and servicing of the receptacles.

## Public Art

The street furnishings in this chapter serve specific functions while also contributing to an aesthetic identity within the public space of streetscapes and plazas. Municipalities are encouraged to get creative and consider purely aesthetic additions to their public space in the form of public art. Sculptures or thematic designs can help set a place apart from otherwise similar downtowns or main streets. Some places even turn the selection of art into a contest to solicit work from local or national talent.



*Make sure that recycling and waste receptacles are clearly marked.*



*Public art installations can liven up a plaza or streetscape and make it a more memorable place.*



## Bicycle Racks

Bicycle racks send the message that “bikes are welcome ” as well as enhance pedestrian opportunities. Place bike racks in strategic locations and paint them to match other street furniture. One community recommends placing a rack for every 30,000 square feet of gross building floor area.

## Bollards

Bollards are versatile outdoor accessories with many design uses and contribute a sense of unity, consistency, and recognition. They can be installed as unlit guides to define a roadway or lit up as guides to pedestrian paths. They serve as visual and physical barriers for institutional, civic, and corporate environments, and protect private access ways. Bollards should share the same design as luminaries and poles, and are generally available in aluminum and cast iron, and in a variety of styles.

## Wayfinding Signs

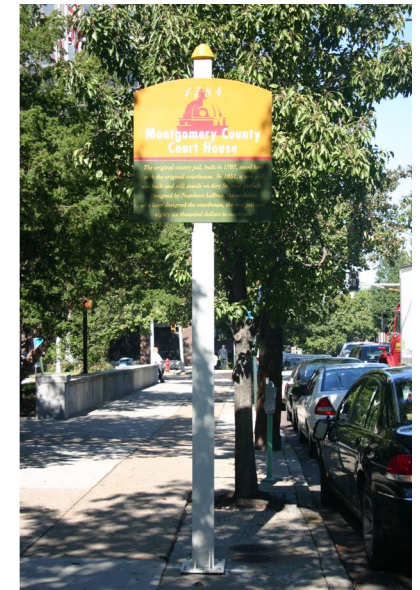
Utilize signs to help visitors find their way to important historic sites, institutional buildings and commercial areas. Signs can be used as a placemaking tool. When designed with a theme and strategically placed in a community, they provide a unifying theme to a revitalization / streetscape plan. Use signs to draw attention to new improvements such as parks, plazas, parking areas, recreational areas, and transportation nodes.



*This iconic bike rack provides whimsy and an attractive amenity to a local streetscape.*



*In Narberth, bollards help guide cars through this downtown parking area, as well as keep pedestrians safe.*



*These wayfinding signs are an excellent addition to Norristown's streetscape, and help guide visitors to various destinations.*



# Appendix

## Administration

Revitalization, including the maintenance of existing installations and the administration of programs, takes time and effort. This Appendix provides descriptions and guidance for maintenance and program responsibilities.

**This Appendix discusses the following:**

- Organization of Maintenance Responsibilities
  - Main Street Programs
  - Business Improvement Districts
- Administration of On-Going Programs
  - Façade Improvement Programs
  - Homeownership Initiative and Improvement Programs
  - Small Business Assistance Programs



## Organization of Maintenance Responsibilities

Once revitalization improvements have been installed in a community, somebody has to maintain these improvements. When the improvements are on private property, such as a renovated theater or a business with a new façade, the maintenance clearly falls on the shoulders of the private property owner. Municipalities should, however, make sure that appropriate maintenance is occurring.

Most improvements, however, will fall into the public realm, such as streetscape improvements, parking lots, wayfinding signs, and street trees. Local municipalities will typically need to maintain these facilities, usually through the public works department.

As an alternative, some municipalities may have a main street program or an organization funded through a Business Improvement District that can maintain these facilities.

In addition to these formal maintenance approaches, local municipalities should ask private property owners and businesses to do basic maintenance in front of their properties, such as daily sweeping, minor weeding, and litter removal.

## Main Street Programs

Over the years, many of the county's revitalization communities have participated in the state Main Street Program. Currently, seven municipalities are active participants in this program, including Ambler, Cheltenham, Jenkintown, Lower Merion, Pottstown, Souderton, and Telford. Other municipalities have staff people or organizations that fulfill many of the roles of a Main Street Program.

Main Street Programs provide structure for municipal downtown revitalization efforts. The programs, which are promoted nationally by the National Trust for Historic Preservation and administered in Pennsylvania by the Department of Community and Economic Development, emphasize four key elements of successful revitalization. These are:

- **Design.** Enhancing the appearance of the commercial district by rehabilitating historic buildings and having compatible new buildings, streetscapes, and signs.
- **Organization.** Building a consensus among the many different people, businesses, and organizations involved in downtowns and Main Street areas and creating a group that can continuously follow through on revitalization efforts.
- **Promotion.** Marketing the downtown's assets to customers, investors, businesses, residents, and visitors.
- **Economic Restructuring.** Strengthening the downtown's economic base and finding appropriate market niches for the downtown area.

Typically, Main Street Programs are run by a main street manager. **They also often maintain streetscape improvements, remove litter, and water flower boxes and planters.**

Some municipalities have had trouble keeping their main street programs going while others have had consistently strong programs. If possible, main street programs should:

- Find a permanent income stream. The most stable funding source is a business improvement district. If this is not available, the main street program must persistently pursue funding through grants, memberships, and an big annual fund raiser.
- Have a strong board that does not depend solely on a main street manager. Board members need to be actively engaged in the organization and willing to reach out to other business leaders.
- Have close relations with the municipal governing body and administration. Municipalities and main street programs must work as partners in the improvement of a community's downtown.
- Create partnerships with local banks, existing and potential developers, and non-profit organizations.
- Get as much exposure for the main street program as possible with special events, regular press releases, a frequently-updated website, an e-newsletter, and announcements in stores.
- Know the market by inventorying properties that are for sale or rent, knowing rental rates, and having a current market analysis.



*Jenkintown has a BID.*



*Ardmore's BID pays to maintain many facilities, like this pedestrian walkway.*

## ***Business Improvement Districts***

One of the best tools used by downtowns around the country is a Business Improvement District. These districts establish a consistent funding stream, through an assessment on all properties, for physical improvements and new services. Money collected through these assessments cannot replace municipal services, such as trash collection or street cleaning, that are already provided. Instead, the money is used for new services, such as:

- Parking organization, maintenance, information, and signage.
- Installation of improvements, such as trash cans, benches, information kiosks, wayfinding signs, flower pots, banners, etc.
- Security services.
- Sidewalk cleaning, snow removal, and maintenance.
- Downtown marketing and business recruitment.
- Organization and management of special events and festivals.
- Advocacy and organization of downtown interests and special projects.

In Montgomery County's revitalization communities, business improvement districts are permitted through the Neighborhood Improvement District law, Act 130, which was passed by the state in 2000. Currently, Lower Merion, Jenkintown, and Pottstown have business improvement districts collecting assessments to run their downtown programs.

Under state law, a Neighborhood Improvement District must be supported by the municipality. Then a vote of property owners must take place, and 40% of the properties must vote against the district for it to be defeated.

Many property owners and businesses in downtown areas may be leery of these districts, since they do involve property assessments. However, these assessments go directly towards services being used by local businesses, and the costs of the services are spread fairly across all properties in the district, based on the property's assessment. Communities considering a vote on an improvement district should:

- Clearly show the benefits that property owners will get from the new district.
- Prepare a high-quality Business Improvement Plan in an easy-to-use format and include property owners and key stakeholders in the planning process.
- Exclude residential properties to the greatest extent possible, since these properties will see less of a benefit from the district than commercial properties.
- Encourage non-profits, such as churches, to make an annual voluntary contribution to the BID.

**Business Improvement Districts provide a key funding source for maintaining streetscape, parking, and other improvements.**



## Administration of On-Going Programs

Many communities have created on-going programs, such as façade improvement programs, that must be administered on a continuous basis. Local municipalities should design these programs to run effectively as soon as the program is started.



*Improved facades in Norristown*



*New façade in Ardmore*

## Façade Improvement Programs

Unlike malls and shopping centers, downtown retail districts do not have common ownership for maintaining the overall appearance of the district. Over time, some of the buildings in downtowns can become dated and rundown. Façade Improvement Programs help property and business owners improve the overall appearance of downtowns.

Façade Improvement Programs have been used in many Montgomery County towns, and the PA Department of Community and Economic Development offers grants for these programs, although the maximum grant amount is relatively limited. The county Revitalization Program has provided façade program grants to many communities, including Ambler, Cheltenham, Hatboro, Hatfield Borough, Jenkintown, Lower Merion, and Norristown.

Generally, Façade Improvement Programs should incorporate the following aspects:

- The business should have to provide a significant match; 50% is the most common match amount in the county.
- Façade improvements should match the historic character of the downtown. Ideally, communities will have design guidelines for these improvements. Lower Merion, for instance, uses their *Commercial District Design Guidelines* for Ardmore.
- Improvements should not consist primarily of normal maintenance work, such as painting trim, but should represent a significant upgrade in the appearance of the building.
- To achieve greater upgrades in appearance, grants may need to be larger. Smaller grants, such as those in the two to four thousand range, may not be enough.
- Façade improvements should be limited to the exteriors of commercial buildings that are visible from public streets, sidewalks, and parking lots.
- Because signs and awnings often do not last long, particularly if businesses change, local municipalities might want to exclude or limit these from façade grants.
- Property owners using façade grants must agree to maintain the improvements for a minimum amount of time, perhaps ten years.



*Pottstown's homeownership initiative program has been used by many homeowners.*

## Homeownership Initiative and Improvement Programs

In most county revitalization communities, the housing stock is relatively old, and unless a home has been upgraded, most of this housing lacks the amenities that many homebuyers desire, such as family rooms, multiple full bathrooms, central air conditioning, large closets, and modern kitchens. Unless a homebuyer is seeking a historically and architecturally interesting home, the older housing stock is often less competitive in the marketplace.

To make this housing more competitive and to encourage homeownership, some communities create homeownership initiative and improvement programs. These types of programs can take different forms:

**Home Ownership Initiative Program.** These programs target new homeowners and offer forgivable loans for property improvements. The intent is to encourage new homeowners to upgrade the properties they are buying. (There are many federal, state, and county programs that are intended to help new homeowners buy their properties. These programs typically help with mortgages, downpayments, and closing costs but rarely address improvements to the property.) Homeownership initiative programs might involve:

- Forgivable loans of 7 to 10 years. Each year that a homeowner stays in the home, a portion of the 0% loan is forgiven. If a homeowner leaves within this timeframe, the homeowner must repay whatever remains on the loan. This is guaranteed with promissory notes and liens on the property. Often, communities make these loans available to all homebuyers regardless of income.
- Grants for upgrades to the property, such as new windows and doors, repointing of brick, bathroom and kitchen upgrades, installation of central air conditioning, new flooring, porch reconstruction, additions, etc.
- Construction must be completed within a certain time frame, perhaps 180 days.

Pottstown has a home ownership initiative program and has done extensive marketing of this program.

**Multi-Family Housing Conversion Program.** These programs cover the costs of eliminating multi-family units in a single-family home that was converted to multi-family units in the past. The initial portions of the loans cover the cost of the conversion, such as the elimination of extra kitchens, the removal of stairs, and changes in room configurations. Additional funds can be used to upgrade the home. Pottstown has this type of program..

**Home Improvement Program.** These programs for existing homeowners provide loans and grants to existing homeowners to upgrade their properties. Improvements might include new roofs, new paint, new heaters and boilers, upgraded kitchens and bathrooms, new electrical systems, etc. Norristown has this type of program.

All of these programs must be carefully administered, with grant recipients required to get competing quotes and to keep accurate invoices and payment records. When a project is completed, it should be inspected by the local municipality to make sure the improvements were installed. **Property owners must properly maintain the properties in order to qualify for loan forgiveness.**





*This office building in Norristown received a grant for improvements.*



*Ambler's theater received a business assistance loan.*

## ***Small Business Assistance Programs***

Most businesses in the county's downtown and main street areas are relatively small and independently owned. Because these businesses are small, they usually do not have expertise in all the different aspects of the business world. Small Business Assistance Programs can help them get this expertise.

These types of program might include training or grants for some of the following subjects:

- Business start-up
- Finding and keeping good personnel
- Accounting and regulatory compliance
- Marketing
- Business administration
- Business restructuring
- Property acquisition and commercial leasing
- Customer base expansion and retention
- Customer service preparation
- Financial management and capital acquisitions
- Recordkeeping and reporting
- Retail merchandising and promotion
- Physical design and layout and interior improvements

Small Business Assistance Programs can be run by a municipal administration, an economic development committee, a local Chamber of Commerce, or a Main Street Program. The federal Small Business Administration provides assistance for these programs, while the county's two Small Business Development Centers (SBDCs) provide consulting, training, and resource assistance. The southeastern part of the county is served by an SBDC at Temple University, while the northwestern party of the county is served by Lehigh University.

Small Business Assistance Programs must include significant enticements, such as grants, loans, or training, that businesses will really want to use. **In return for this assistance, businesses must properly maintain any improvements funded through the program for the expected useful life of the improvements.**

Local main street managers or economic development personnel must keep their fingers on the pulse of the business community to know what is happening and what is needed in assistance. This can be done by constantly talking with business and property owners, knowing when leases are up, tracking vacancy rates, and surveying customers.

Some communities have prepared market studies for their downtown areas. These studies help businesses understand the disposable income, shopping preferences, and lifestyles of their potential customer base. These market studies can then be used as a base reference for specific business assistance projects and training.







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