

# Philadelphia City Planning Commission River Greenway Design Guidelines



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The *Waterfront Redevelopment District* zoning classification encourages the orderly development of large parcels of formerly industrial, utility and port related land located along or near rivers, streams or canals into new mixed-use communities. All types of residential uses and commercial facilities in support of these new communities and existing neighborhoods as well as certain non-residential uses are permitted in accordance with an approved Master Plan of development.

The *Waterfront* zoning classification includes the requirement for a “waterfront setback” to allow for unrestricted public access to the river’s edge. The setback is nominally 50 feet, and includes two elements of use within that dimension. The setback must include a public space of a width of 30 feet that may have a private or publicly owned space within it. In addition, there must be a width of 20 feet, that may be publicly or privately-owned and that is dedicated to pedestrian, bicycle or vehicular movement.

The public ribbon of land defined by this new zoning classification will collectively provide the City a “RIVER GREENWAY” along its riverbanks. This asset will benefit communities that have historically lined the river but that have never had direct access to it. In addition, the new paths of circulation along the river will engender recreational experiences that will be among the best of their kind.

The functions and conditions along the banks of Philadelphia’s rivers are varied. They range from the structured bulkheads of Penn’s Landing to the more casual and natural stretches of bank, beach and tidal pools along the upper Delaware River, from the historic canal banks of the upper Schuylkill to the industrial edges of the lower Schuylkill.

Because the conditions are so varied along the city’s many riverfronts the following design guidelines are presented as design approaches that may be applied to a particular set of circumstances. The guidelines are exemplary and not site specific. They may and should be interpreted appropriately for each development site, but they all reflect the underlining design goals developed for the “New River City” initiative.

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Philadelphia's Riverbanks can be classified into two broad categories: natural shorelines and stabilized shorelines. The various conditions exhibited along the shorelines should warrant different treatments to the design of the River Greenway.



Stabilized Shoreline



Natural Shoreline

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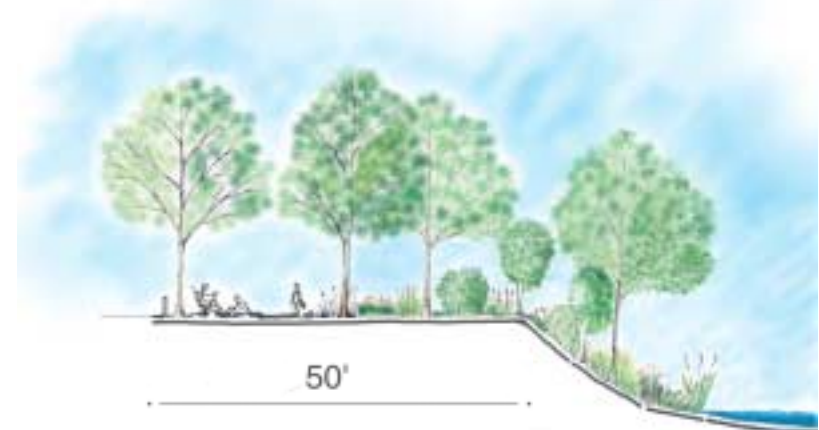


## Natural Shorelines (Soft Edge)

Natural shorelines can be in the form of vegetated banks, tidal flats, wetlands and natural beaches. These shorelines are important to the health of the river as they support habitats for plant, animal and aquatic life and mitigate bank erosion.

The developed greenway should respect these natural edges and features. Existing vegetation and elements such as rock formations and marshes could be featured along the pathway as it meanders through the site.

Gentle slopes are appropriate points to permit public access to the waters edge for boat launches or fishing areas, however designated access points should be limited to preserve as much natural habitat as possible.



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The design of the River Greenway must support the marine health of Philadelphia's rivers, streams and creeks. In some cases, this may mean that banks must be restored to a natural grade. The beauty of the city's rivers should be seen as an asset that supports growth and renewal in many neighborhoods close to waterfronts.

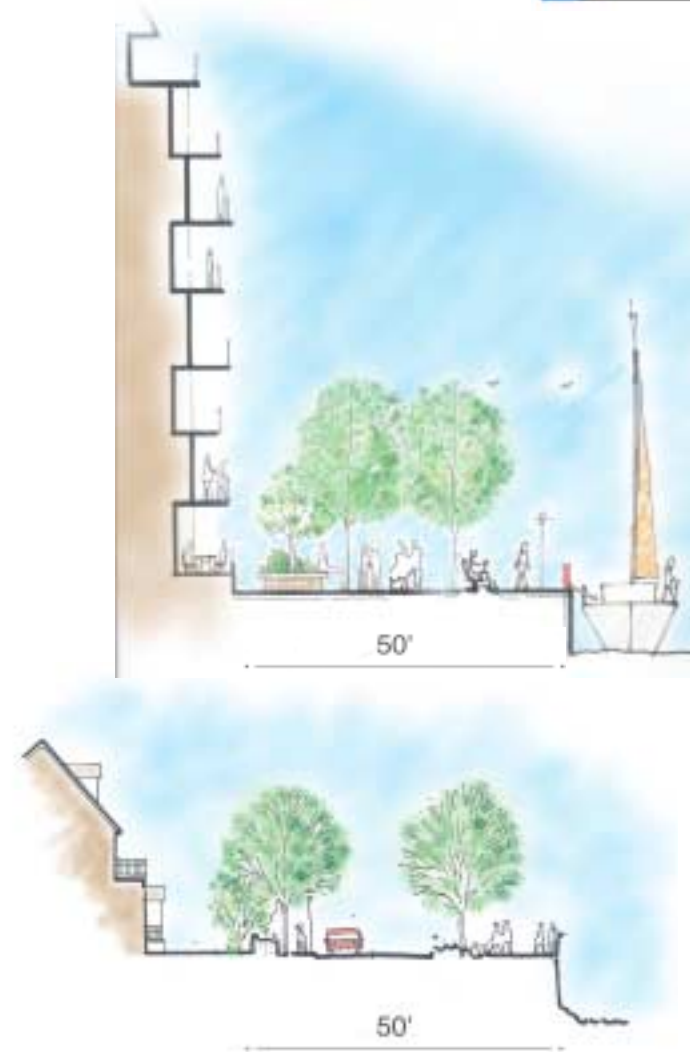
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## Stabilized Shorelines (Hard Edges)

Many of Philadelphia's riverbanks have been altered to facilitate industrial and port uses or to control erosion and tidal water levels. Bulkheads, the vertical wall structures used to delineate the river from the shore, and finger piers are common in the tidal areas of the river as they allowed transport ships to moor along the bank. Riprap or paved banks are common erosion control treatments.

The developed greenway should take advantage of these unique settings. Piers can be utilized as large public gathering spaces along the pathway. The bulkhead edge provides opportunities for the pathway to approach the water's edge and establish a formal esplanade. Interpretative signage used along the pathway could communicate the historic significance of the adjacent sites and the role they played in Philadelphia's industrial past. Industrial relics that remain (piers, moorings etc) could be preserved and featured as elements along the path.



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Bulkheads allow for the passerby to enjoy the immediacy of the riverfront. The bulkhead structure may be the remnant of an industrial site or a pier, or it may be created as part of a new development's river edge. Portions of some rivers, creeks and streams were channelized with bulkheads long ago and remain that way today.

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Engineered Soil Pavement



Crushed Stone (Red Tipple)



Boardwalk



Asphalt



Concrete

Contingent on the recreational trail's location along the riverfront, and its proximity to the water itself, the materials used to pave the trail should change. Some locations will require a higher degree of formality than others. As the path runs through areas that are already established parks, the trail may be composed of compacted earth or gravel; at the water's edge, a boardwalk may be required to withstand potential periodic inundations of high water or tidal action.

## Trail Paving Options

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Cobblestone



Collage of paving types  
in free-form composition



Precast concrete unit paver



Brick with Stone Pavers



Asphalt Hexagonal Paver



Concrete/Aggregate Finish



Stone Pavers

At locations where major neighborhood streets terminate at the river's edge, there is an opportunity to create a gathering space that could be the site of community celebrations, the start or ending point of a "run" or a "walk," or the location of a special sculpture or object that is a legacy from the community's past. Opportunities for placement of specially paved areas may also occur within new development that offers significant communal space.

## Special Features Paving Options

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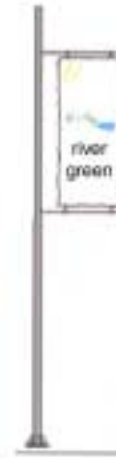
Sculpture



Trash Receptacle



Wooden Bench/  
Metal Bench similarly  
appropriate



Decorative  
Banners



Pedestrian  
Lighting



Bicycle Rack



Wayfinding Information Post



Guardrail at river's edge



Guardrail with integral lighting



Information Kiosk



Information Kiosk/Pavilion

Although the river's edge will be held by both public and private owners, a consistent vocabulary of site furnishings should be established in order to promote visual continuity in the experience of the "RIVERFRONT GREENWAY."

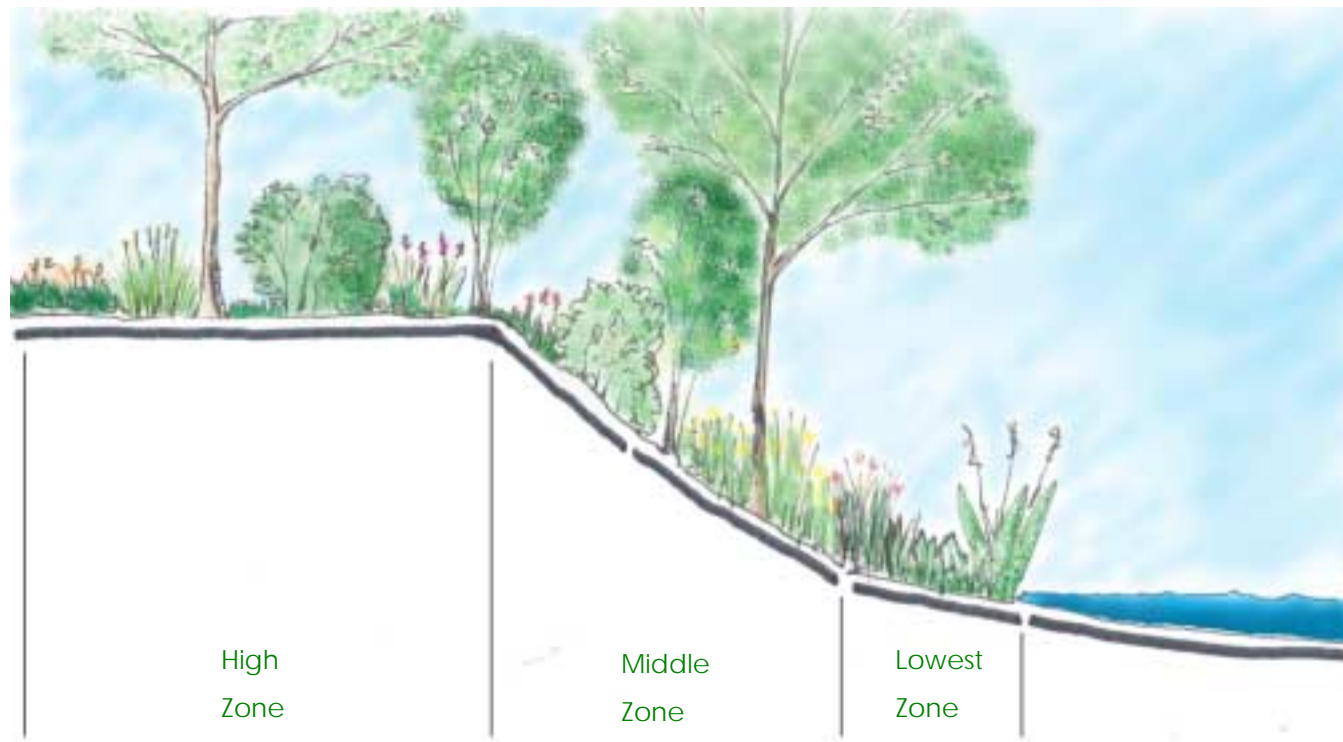
## Site Furnishings

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## Landscaping

The proper selection and installation of plant materials is key to a successful landscape. There are essentially three zones within the riverbank landscape (Figure 1). The lowest elevation supports plant species adapted to standing and fluctuating water levels. The middle elevation supports a slightly drier group of plants, but still tolerates fluctuating water levels. The outer edge is the highest elevation and generally supports plants adapted to dryer conditions.



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## Lowest Zone - Appropriate native plants include:

asters (Aster spp.)  
goldenrods (Solidago spp.)  
bergamot (Monarda fistulosa)  
blue-flag iris (Iris versicolor)  
sedges (Carex spp.)  
ironweed (Vernonia noveboracensis)  
blue vervain (Verbena hastata)  
joe-pye weed (Eupatorium spp.)  
swamp milkweed (Asclepias incarnate)  
switchgrass (Panicum virgatum)  
shrub dogwoods (Cornus spp.)  
swamp rose (Rose palustris)  
inkberry (Ilex glabra)  
arrowwood (Viburnum dentatum)  
sweet pepperbush (Clethra alnifolia)  
bayberry (Myrica pensylvanica)  
buttonbush (Cephalanthus occidentalis)  
swamp azazlea (Rhododendrom viscosum)  
elderberry (Sambucus canadensis)  
green ash (Fraxinus pennsylvanica)  
river birch (Betula nigra)  
sweetgum (Liquidambar styraciflua) eastern red  
cedar (Juniperus virginiana)  
red maple (Acer rubrum)

Note: This information informed by the  
**Philadelphia Water Department**

## Middle Zone - Appropriate native plants include:

black eyed Susan (Rudbeckia hirta)  
switchgrass (Panicum virgatum)  
indian grass (Sorghastrum nutans)  
little bluestem (Schizachyrium scoparium)  
coneflower (Rudbeckia spp.)  
wood fern (Dryopteris marginalis)  
columbine (Aquilegia canadensis)  
blue flase indigo (Baptisia australis)  
viburnums (Viburnum spp.)  
virginia rose (Rosa virginiana)  
ironwood (Carpinus caroliniana)  
cherries (Prunus spp.)  
red oak (Quercus rubra)  
scarlet oak (Quercus coccinea)  
willow oak (Quercus phellos)  
hickories (Carya spp.)  
eastern red cedar (Juniperus virginiana)  
hackberry (Celtis occidentalis)  
witch-hazel (Hamamelis virginiana)  
steeplebush (Spiraea tomentosa)  
blueberry (Vaccinium spp.)  
serviceberry (Amelanchier canadensis)  
winterberry (Ilex verticillata)  
spicebush (Lindera benzoin)

## Outer Zone - Appropriate native plants include:

many grasses & wildflowers  
basswood (Tilia americana)  
white oak (Quercus alba)  
scarlet oak (Quercus coccinea)  
black oak (Quercus velutina)  
american beech (Fagus grandifolia)  
black chokeberry (Aronia melanocarpa)  
juniper (Juniperus communis)  
sweet-fern (Comptonia peregrine)  
beach plum (Prunus maritime)  
smooth serviceberry (Amelanchier laevis)  
american holly (Ilex opaca)  
sassafras (Sassafras albidum)  
white pine (Pinus strobes)

## Plant Material Guidance

Plant materials should conform to the American Standard Nursery Stock, published by the American Association of Nurserymen, and should be selected from certified, reputable nurseries. Planting specifications should be prepared by the designer and should include a sequence of construction, a description of the contractor's responsibilities, a planting schedule and installation specifications, initial maintenance, and a warranty period and expectations of plant survival.

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Hexagonal Wood-frame Gazebo



Wood-frame observation pier



Wood-frame observation pier allowing view of wetland below



Bridges over creeks that flow into the river



Historic Structures along the riverfront



Interpretive signs at guardrails provide information concerning the viewer's location on the river and site history

The recreational trail along the Delaware River will have significant nodes that interpret site history or explain the ecosystem of the river. The trail should be designed in such a manner as to underscore the continuity of the path but allow for the occasional element designed for rest, education or delight.

## Nodes along the Recreational Trail