



Public activities and events, such as sidewalk cafés, street fairs and vendors enliven connections.



Connections

To the Rivers



Intent

Perpendicular connections bring people to the riverfront. Sidewalks, public streets, pathways, and promenades provide safe and engaging passages and reinforce the riverfronts as the public realm. The following guidelines will help to ensure that all connections relate effectively to the surrounding context.

Key Concepts

- Perpendicular connections, every 400–600 feet, will extend the grid of the community into the park and natural systems, linking the urban grid to the natural forms of the waterscape and landscape.
- Connections from buildings and districts to the rivers should be publicly accessible, even where they run along private development.
- Public activities and events, such as sidewalk cafés, street fairs and vendors will enliven the connections, both as temporary and permanent installations.
- Major perpendicular connections should be designed as a continuous place, with the building wall and landscaping defining the character of the street.

Guidelines

Major Perpendicular Connections

Major perpendicular connections are those that provide connections between a community and a riverfront destination. These connections, ideally located every 400–600 feet, are most often public streets that provide both pedestrian and vehicular access to the river. These roads often provide connections to major attractions and other publicly oriented uses.

- 1.1 Major perpendicular connections should be wider than those on secondary streets, in order to fully accommodate the needs of pedestrians, bicyclists and green stormwater infrastructure, with the intent to elevate the public realm and create special spaces.
- 1.2 Streets should be designed with all transportation modes fully accommodated instead of being designed primarily for automobiles. In addition to being **multi-modal, complete street** design considers urban

DEFINITIONS

Multimodal

Characterized by several different modes of activity or occurrence

Complete streets

Designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities



design, environmental goals, quality materials, the beauty of the landscaping, and stormwater management.

- 1.3 Locate publicly oriented uses in ground floors along major perpendicular connections, including retail shops and restaurants.
- 1.4 Maintain established build-to lines along major perpendicular connections. Where retail and restaurant uses will be located, provide for sidewalk café seating and arcaded ground floors where appropriate.
- 1.5 Program ground floors to accommodate retail, restaurant, and other public uses.
- 1.6 Minimize curb-cuts, and do not locate service entrances along major perpendicular connections.
- 1.7 Street trees, lighting, sidewalks, and curbs should comply with all municipal standards and guidelines.

Perpendicular Connections along Private Uses

In many cases, connections to a riverfront will be provided along the edges of or pass through private development that is not generally open to the public, such as residential and private office developments. In these cases, it is important to clearly define the connection as a public space.

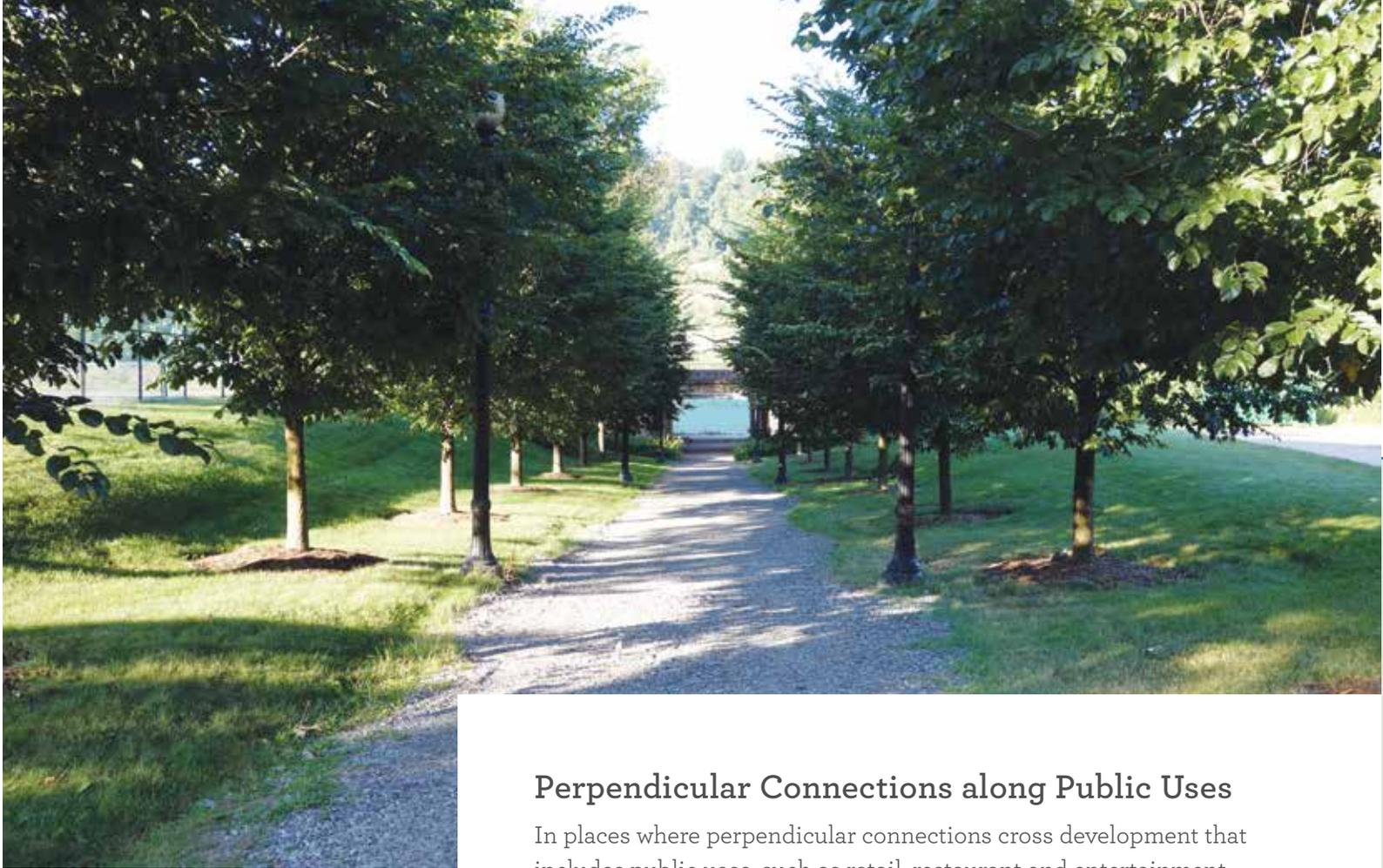
- 2.1 Provide a minimum walkway width of 12 feet for perpendicular connections to be maintained as an easement or public right-of-way. Provide a minimum **setback** for all structures, including fences, of 10 feet on either side of the connection.
- 2.2 Fences along private spaces that border connections should have a maximum opacity of 50 percent and a maximum height of 48 inches. Additional screening and enclosure should be achieved through the use of landscaping materials and changes in elevation.
- 2.3 In general, for private uses located along connections, elevate the first level of the building 18 to 30 inches above grade through the use of **terraces** and porches. This will provide some visual privacy between the private use and the public realm, as well as create new opportunities for “semi-public” spaces where the occupants of the building may enjoy living or working adjacent to the riverfront.
- 2.4 Provide a finished edge along the connection.
- 2.5 Design the surface of the connection to be consistent with the materials of the trail or promenade to which it connects. At minimum, provide a crushed limestone surface.
- 2.6 Provide pedestrian-scaled lights.
- 2.7 Provide pedestrian crosswalks where perpendicular connections meet a street.
- 2.8 If possible, locate public amenities, such as seating, maps, etc., at the ends of the connection to serve as a focal point, drawing attention to the riverfront and encouraging movement along the trail connection.

Setback

In land use, the distance a building or other structure is set back from a street or road, river, shore or flood plain or any other place deemed to need protection.

Terrace

A level paved area or platform next to a building



Perpendicular Connections along Public Uses

In places where perpendicular connections cross development that includes public uses, such as retail, restaurant and entertainment occupancies, the connections provide opportunities to enhance the development, create additional public open space and engage those adjacent uses. Perpendicular connections along public uses can be designed to serve as public plazas and gateways to the riverfront. They are encouraged to be inhabited spaces, providing amenities to both users and business owners.

- 3.1 Orient ground-floor uses to the connection and seek to engage the public.
- 3.2 Provide storefront glazing, extending from the ground to a minimum height of 12 feet. Wrap the storefront glazing around the corners of the buildings, to provide visual connections to the publicly oriented uses from all approaches.
- 3.3 Locate public entrances to ground floor uses along the perpendicular connection.
- 3.4 Sidewalk cafés are encouraged as uses along the perpendicular connection.
- 3.5 Where the perpendicular connection intersects a street, maintain wide pedestrian crossings that are on axis with the connection.
- 3.6 Provide curb-cuts at these crossings to accommodate people of all levels of mobility, but install removable **bollards** to control vehicular access.
- 3.7 Design the pattern of street lights and trees along the road that is intersected by a perpendicular connection to relate to the connection. Maintain views down the connection toward the rivers from the opposite side of the road and keep them uninterrupted by street trees and lights.

Bollard

Structures used to control pedestrian and vehicular traffic, protect critical infrastructure, provide perimeter highlights or define a pathway.

Perpendicular Connections across and Down to the River

Easily navigable pedestrian connections from the ends of the bridges to the riverfront trails, promenades and roadways are critical to the success of a riverfront. Bridges can provide unique experiences for a riverfront and may also provide many of the key views of a community and the riverfront. Access can be provided through a variety of vertical connections, including stairs, ramps, and paths.

- 4.1 Ensure vertical ramp connections are in place in key locations.
- 4.2 Preserve the architectural character and details of bridges, while seeking to provide universal accessibility at a minimum five percent grade.
- 4.3 Respect river views and site lines when designing new bridges. Railings and barriers should be designed with consideration of good views to the river.
- 4.4 Light bridges and vertical connections.
- 4.5 Accommodate users of different mobility levels on vertical connections in accordance with ADA requirements.
- 4.6 Clearly mark access points to vertical connections from trails and promenades using thoughtfully designed wayfinding signage consistent with park and trail standards.

FURTHER INFORMATION

For more information on connecting riverfronts along the riverbank and to and from a community, refer to the *Three Rivers Park Design Guidelines*.

riverlifepgh.org/resources



Connections

Along the River



Intent

Parallel connections along the river's edge serve many different users and connect neighborhoods and development sites to the water, providing public access, opening up views, and re-engaging the rivers as part of the **public realm**. This section is intended to provide guidance for designing riverfront trails, promenades, roads, and scenic drives, each of which addresses a key issue of access along the rivers.

DEFINITIONS

Public realm

Consists of the roadways, sidewalks, parks, plazas and other open spaces that comprise the arteries and focal points of a community's framework. It is a space where civic interaction occurs.

Key Concepts

- Connections should be accessible to the public even when they are adjacent to private development.
- Connections should vary in character, providing both quiet, reflective threads and lively, inhabited promenades.
- Promenades provide opportunities to experience the river from a different vantage point.
- Public activities and events, such as sidewalk cafés, street fairs and vendors, will enliven the connections, both as temporary and permanent installations.
- Connections should be usable year-round on a variety of scales, encouraging activity. In the summer, they will provide tranquil shade along the riverfronts, while in the winter the sun will penetrate to warm the surface of the trails and promenades for recreational users and pedestrians alike.
- Parallel connections between landings, including trails and river roads, will provide a soft, green foil to the urban density and activity.
- Riverfront trails should be simple and integrated with the landscape and defined by the vegetation of the park.
- Each stretch of trail provides unique conditions, needs, and opportunities. Solutions should be appropriate for each segment in order to plan for step-by-step implementation, one project at a time.

Guidelines

Riverfront Trails

Trails are riverfront connections that place emphasis on moving along the river for longer distances as a pedestrian, runner, cyclist or rollerblader. Trails place emphasis on providing riverfront connections for recreational uses, and as such should be designed with those users in mind.

When considering a development that includes riverfront trails, the following guidelines should be considered:

- 1.1 In general, contain the trail within a canopy of **deciduous trees**, providing shade in the summers and allowing sunlight to penetrate in cooler months. The trail should move in and out of the **tree canopy**, opening to provide views to the river and closing again to provide a sense of intimacy and enclosure.
- 1.2 Avoid planting trees in even rhythms such as those typically used in street tree plantings, unless it is desired to emphasize a specific architectural character. Instead, plant them in groups with varying densities.
- 1.3 On open sites, plant masses of dense canopy trees and understory trees and shrubs along the trail opposite the river to create a background of green along the riverfront setting. Provide filtered or framed views through the planting masses to significant elements along the trail to ensure visual connections for safety and transparency. Where dense canopy tree plantings are not possible or desired, provide a palette of native grasses and perennials to create naturalized meadows, as well as shrubs and small understory trees to provide a sense of enclosure along the riverfront.
- 1.4 On the river side of the trail, design the **tree canopy** to open and close, creating new views both to and from the trail. This will create views of the surrounding riverfront.
- 1.5 Avoid railings along trails wherever possible. Where they are provided for safety, railings should be designed that fit the materials identified for the riverfront and should be considered as opportunities to integrate public art.

DEFINITIONS

Deciduous trees

Trees that shed their leaves seasonally

Tree canopy

The layer of leaves, branches, and stems of trees that cover the ground when viewed from above.



Low-impact

Constructed to have minimal impact on the surrounding environment

- 1.6 Locate light fixtures, trashcans, signage, and other necessities discretely in the landscape of the trails. Provide drinking fountains, mileage markers, maps, and informational signage, integrating them with the landscape. Where appropriate, locate emergency call-boxes at frequent intervals to provide additional safety and security.
- 1.7 Wherever possible, provide a dual-surface trail with a crushed limestone surface for pedestrians and runners and a hard surface for bikers and rollerbladers.
- 1.8 Creative trail design, such as the development of **low-impact** techniques, like suspended boardwalks and permeable walkways, are encouraged in appropriate locations. Recommended applications include locations where such designs will minimize the disturbance of habitats.
- 1.9 Consider alternatives to asphalt as a surfacing material for connections in and to the riverfront park. Where the use of asphalt is dictated by the construction of temporary connections or budgetary constraints, use an asphalt material that will provide a light-colored surface, such as through the addition of limestone to the aggregate. Black asphalt is highly discouraged as a trail surface material.
- 1.10 Provide a durable, finished, clean edge along the connection such as stone or concrete.

Riverfront Promenades

Promenades are generally more pedestrian in character, rather than recreational. They provide opportunities to experience the river from a different vantage point. Promenades are places to see and to be seen. They can open up the views of the river and integrate the character of the community with the pastoral nature of a park. Promenades can occur where landings intersect connections along the riverfront park and where urban districts are adjacent to the riverfront.

- 2.1 Use higher-quality materials, such as stone paving, for promenades.
- 2.2 Consider alternative routes for cyclists along a promenade that may interrupt the established path of riverfront trails. Alternatives include the provision of a “high” promenade paved with stone, where pedestrians and shoppers might stroll, in conjunction with a “low” trail along the river, surfaced with concrete or crushed stone. Other recommendations include providing clear routing along adjacent streets using separated bicycle lanes if possible, marking access points that will rejoin the riverfront trail.
- 2.3 Promenades along a riverfront park should be considered part of the park.
- 2.4 Plant trees within 15 feet of the river edge of the promenade.
- 2.5 Plant dense landscaping below the front edge of promenades in order to frame views and give the user the sense of vantage point that comes from sitting above the trees.
- 2.6 Consider the issue of color for promenade surfaces. Warm-colored paving will seem warmer in the gray winters, while cool colors will seem cooler in

the summers. Use natural-colored, non-glare walking surfaces at landings or other points of interest where more focus is intended.

- 2.7 For buildings located along promenades, provide ground floor uses that are public in nature, including civic, cultural, retail, entertainment, restaurants, and public lobbies.

Riverfront Streets

Streets along a riverfront have the potential to be an exciting and different way to experience riverfront parks, and to create new opportunities for development adjacent to them. They can make the riverfront more public and open up all areas of the park for improved public safety and for persons with limited mobility. At the same time, care must be taken in designing and locating riverfront streets to ensure that access to the riverfront is not restricted by the presence of vehicular streets, and with pedestrians as a primary consideration. Riverfront streets should be perceived as an extension of the riverfront park.

- 3.1 Encourage residential uses along riverfront streets.
- 3.2 Locate primary addresses and entrances to buildings on the riverfront street.
- 3.3 Limit riverfront street width to no more than two lanes of traffic and one lane of on-street parking. The maximum width for riverfront streets should be 34 feet, including two lanes of traffic and one lane of on-street parking on the land side of the street. The preferred width is 30 feet.
- 3.4 For new streets along the riverfront, provide an appropriate setback that allows a natural slope and enough space for different desired activities along the river.
- 3.5 Provide a 7- to 8-foot sidewalk and 4- to 5-foot tree range. Where space is limited, the trail may substitute for the riverside sidewalk.
- 3.7 Orient riverfront streets to pedestrians and light traffic. Truck and delivery traffic are not appropriate on riverfront streets.
- 3.8 Post maximum speeds of 25 miles per hour on riverfront streets, with traffic-calming measures integrated in pedestrian districts at intervals of no more than 400 to 600 feet.
- 3.9 Provide pedestrian crossings not less than 600 feet apart. Provide a change of street paving that incorporates variations in texture and color at pedestrian crossings.
- 3.10 Plant riverfront streets with dense tree canopies, allowing views to the river below the canopies.
- 3.11 Streets should be designed with all transportation modes fully accommodated instead of being designed primarily for automobiles. In addition to being multimodal, complete street design considers—along with the urban design and environmental goals—thoughtful design and integration of materials, landscaping and stormwater management.

Scenic Drives

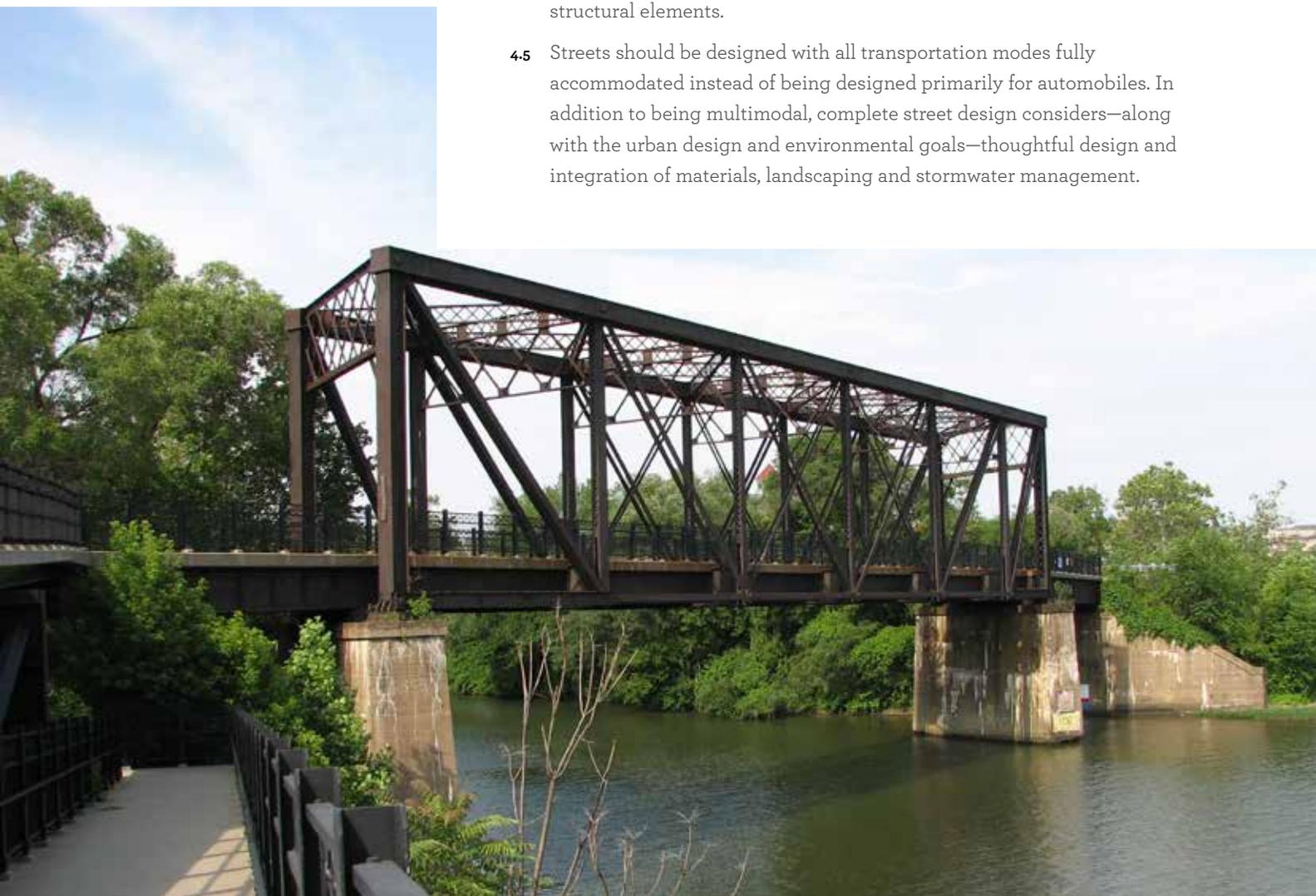
Scenic drives are riverfront streets, roads and parkways located along the riverfronts, which are primarily in a landscape setting, with views to the river and the surrounding landscape. These should be considered primary connections that preserve views of the river and scenic quality of the landscape and enhance the experience of driving, biking and walking along the riverfronts. Scenic drives have a special design quality that includes appropriately detailed cartways and features design elements such as signage, guardrails, lighting, plantings, bridges, elevated roads and other road features. Scenic drives can respond to the landscape vocabulary or setting where they are designed, and can be either formal or natural in character.

FURTHER INFORMATION

For more information on connecting riverfronts along the riverbank and to and from a community, refer to the *Three Rivers Park Design Guidelines*.

riverlifepgh.org/resources

- 4.1 Views should be maintained from scenic drives into the river valleys through the careful selection of structural elements, including barriers.
- 4.2 Provide landscaping and street trees for scenic drives in order to enhance the roads as green boulevards through the community.
- 4.3 Utilize high-quality materials for the reconstruction of scenic drives, including concrete sidewalks.
- 4.4 Consider the impact of reconstruction on views to and from the scenic drives. Considerations include the use of appropriately designed barriers, the selection of streetlights, and the design of retaining walls and other structural elements.
- 4.5 Streets should be designed with all transportation modes fully accommodated instead of being designed primarily for automobiles. In addition to being multimodal, complete street design considers—along with the urban design and environmental goals—thoughtful design and integration of materials, landscaping and stormwater management.



Connections

Landings

Intent

Landings occur where two or more park connections come together and provide focal points for activity and connection at the water's edge. Landings are intended to be the public places that people are drawn to for special events or activities and serve as destinations and landmarks. They can bring together transit systems and activity centers. They are places where people find distinctive experiences along the river's edge. Landings are intended to provide opportunities for design and physical intervention. Landings on the water are an opportunity for unique places where people, land and water meet.

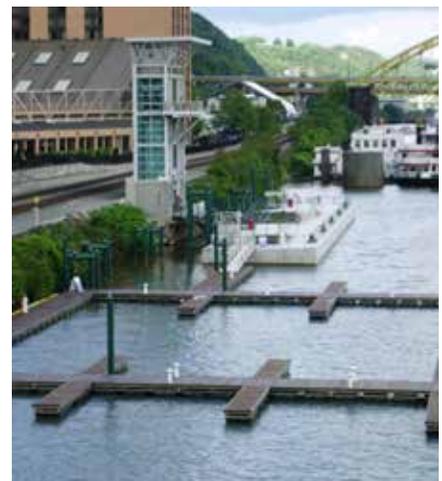
Guidelines

- 1.1 Landings should be transitional and connective points between the river's edge, the riverfront park and the community, with access to the trails, esplanades, promenades and transit connections.
- 1.2 Landings should comprise a series of spaces that vary in size and purpose, and serve those who use the riverfront park daily or for an occasional or one-time visit.
- 1.3 Landings should be engaging and lively public places, with with uniqueness and character.
- 1.4 Landings should be well designed, with higher-quality materials, to serve as places of activity and offer contrast to the natural elements of the riverfront park.
- 1.5 Landings should provide opportunities for gathering and meeting spaces for daily use or special events.

FURTHER INFORMATION

More detailed information and building design guidelines can be found within the ***Three Rivers Park Design Guidelines***.

riverlifepgh.org/resources



Connections



Districts

Intent

This section will provide guidance for larger-scale planning and development efforts at riverfront sites. Planning and development at the district scale can be transformational for communities and regions. Developers and planners should take the utmost care to make the most of these opportunities to improve both the built and natural environments.

Key Concepts

- Riverfront districts will offer the greatest opportunity to renew and reinforce the quality of places to live, work, and play because of the added value of being adjacent to a riverfront park.
- Districts provide opportunities to support and enhance the activities of a park as well as create destinations for visitors.
- The riverfront should serve as a front yard, with architecture-facing green space, pedestrian walkways, parks and water landings.
- Each riverfront district should be physically and functionally unique in character and sense of place.

Guidelines

Street and Grid Patterns

Today, it is rare to find streets that extend fully to the river's edge. As industrial uses have shifted away from our riverfronts and new patterns of development emerge in communities, there are opportunities not only to re-establish abandoned street grids, but to create new ones that connect landlocked neighborhoods to the rivers.

- 1.1 Seek to re-establish historic street grid patterns that once extended to the river.
- 1.2 In districts where streets did not extend to the river, establish new perpendicular connections to provide such access, with the scale of the grid pattern responding to adjacent neighborhood patterns. In general, extend perpendiculars to the river at regular intervals of 400–600 feet apart.
- 1.3 Establish street grids that respond to topography. For instance, grids should shift where necessary to open up views and change vantage points.

Views to and from Districts

- 2.1 Building configurations should maximize **view corridors**.
- 2.2 Where possible, maintain or maximize views to the river from individual buildings.

Transportation Planning

Developers and building owners are encouraged to provide amenities accommodating occupants who wish to use alternative transportation, including bicycles and public transit.

- 3.1 Consider future plans for water transportation as opportunities to make connections to water landings.
- 3.2 Provide secure bicycle storage, personal lockers, changing rooms, and showers to accommodate a minimum of 5 percent of the building's occupants.
- 3.3 Maximize on-street parking throughout districts.
- 3.4 Locate parking below-grade or in a structured garage where possible. When that is not possible, minimize visible parking, shield parking from view, or locate in the interior of the block.
- 3.5 Develop shared parking facilities with nearby development, located away from the riverfront. Explore carpool options and locate parking pools on-site to minimize the impact of parking along the rivers.
- 3.6 Ensure any new infrastructure is in compliance with regional and municipal comprehensive and transportation plans.

Site Planning

- 4.1 Locate public entrances to retail and commercial uses along the riverfront facade of the building. Create riverfront addresses, particularly with regard to publicly oriented uses.
- 4.2 In order to activate open-space connections, locate pedestrian-oriented uses on the ground floor of buildings and provide pedestrian amenities.
- 4.3 Utilize landscaping, rather than walls and fences, to create semipublic/private **buffers**.
- 4.4 Do not build surface parking lots adjacent to the riverfront.
- 4.5 Locate buildings using traditional urban build-to lines, occupying the majority of street frontages, and activating sidewalks and other connections.
- 4.6 Whenever possible, do not locate vehicular entrances to parking garages and building services along primary perpendicular connections. Minimize curb-cuts for vehicular access to development sites along primary perpendicular connections. Do not locate curb-cuts within 100 feet of a street corner.
- 4.7 Maximize the use of pervious materials and **green infrastructure**.
- 4.8 Reduce on-site heat gains by minimizing dark-colored surface areas, such as black asphalt. Acceptable alternatives include concrete paving, unit paving

DEFINITIONS

View corridors

Three-dimensional viewpoints that start from a fixed position, encompass a given visual range, and terminate at a particular object. They can be "narrow" or "wide" depending on the visual range. Identifying view corridors helps to protect views to iconic natural features or architectural landmarks.

Landscape buffers

Landscaping located along the perimeter of an area intended to screen or separate land uses either from one another or from a public street.

Green infrastructure

Uses vegetation, soils and natural processes to manage water and create healthier urban environments. It refers to stormwater management systems that mimic nature by soaking up and storing water.

Brownfield

Property where the expansion, redevelopment or reuse of may be complicated by the presence or potential presence of a hazardous substance, pollutant or contaminant.

Stormwater best management practices

Best practices to design, implement, and evaluate stormwater management efforts

Light pollution

Brightening of the night sky that inhibits the observation of stars and planets, caused by street lights and other man-made sources

Landscape swales

Refers to a wide and somewhat shallow depression on the ground that is commonly used as drainage for carrying water in landscaping.

FURTHER INFORMATION

More detailed information and building design guidelines can be found within the *Three Rivers Park Design Guidelines*.

riverlifepgh.org/resources

systems, light-colored asphalt products using limestone aggregates or colored sealants, and increasing areas of landscape and groundcovers.

4.9 Apply sustainable site planning practices, such as:

- Erosion and sedimentation control,
- Development densities that activate the environment,
- Redevelopment of **brownfields**,
- Stormwater best management practices**,
- Use of native plantings,
- Use of locally sourced materials,
- Minimization of **light pollution**.

4.10 Bury all utilities in development sites.

4.11 Do not locate transformers and other above-grade utility structures along the park or perpendicular connections to the park.

Open-Space Planning and Design

- 5.1** When designing new open spaces, check plans for the surrounding community. Public open-space requirements should be met through the creation of riverfront promenades, additional perpendicular connections to the park and other spaces that complement the river park.
- 5.2** Design new open spaces to occur mid-block, not at corners, and in locations that are adjacent to the riverfront or perpendicular connections to the park.
- 5.3** Sidewalk cafés and similar uses are encouraged. Make open space accessible to the public 24 hours a day.
- 5.4** Activate open spaces by locating publicly oriented uses in the ground floors of adjacent buildings. Provide pedestrian amenities, including seating.

