



# Green/Public Space Research & Overview

This attachment includes: key definitions, staff research, applicable sections of the Rio29 Small Area Plan and staff recommendations.

## What is "green or public space"?

Form-based codes address the relationship between building facades and the public realm, presented in both words and diagrams/visuals. According to the Form Based Codes Institute (FBCI), public standards are one of the five main elements of a form-based code. This specifies elements in the public realm and often uses the Regulating Plan to specify locations where green or public spaces should be located.

Green or public space is regulated by 1) showing specific public spaces in a Regulating Plan for the area and requiring the property owner to construct public spaces where indicated and/or 2) requiring a minimum percentage of outdoor amenity space based on building type or area.

Key Definitions | Green / Public Space

Below are brief, conceptual definitions of different types of public spaces recommended by the Rio29 Small Area Plan.



**Indianapolis Cultural Trail** Indianapolis, IN

Two Way Cycle Track

A path located along the street, marked exclusively for cyclists and typically complements a sidewalk for pedestrians.



**Rivanna Trail** Charlottesville, VA

Trail

Narrow, less developed paths, composed of dirt, mulch or crushed gravel that can provide connections between neighborhoods and amenity spaces and recreational opportunities.



**Berkmar Drive Extended** Charlottesville, VA

Shared Use Path (SUP)

An urban, wide (at least 10') path that is expected to be paved and located along streets to serve as both a recreational amenity and a commuter route.



**Linear Park Rendering** Atlanta, GA

Linear Park

A park that is longer than it is wide and incorporates a trail along its length. It provides green space and connectivity within an urban area serving as a space for both passive and active recreation.



**Water Square Benthemplein** Rotterdam, NL

Floodable Park

A space that provides a dual function of park space and stormwater management. After a heavy rain, the space may be flooded, after water subsides it will be usable park space. These can be permeable hardscapes surfaces and/or natural green spaces.



**Ragged Mtn Natural Area** Albemarle County, VA

Natural Area

A mostly wood and undeveloped area intended to preserve and protect natural resources and to provide opportunities for recreation outside of the surrounding urban environment.

# Key Definitions | Green | Public Space



**Bryant Park** Manhattan, NY

## Plaza/Green

An outdoor gathering area for adjacent uses that functions as a passive open space with opportunities for relaxation, sitting or strolling, and social activities such as casual gatherings or organized events.



**San Jacinto Plaza** El Paso, TX

## The Square

A central outdoor civic space for Rio29 that should be adjacent to and designed to complement an existing or future civic use/building. It should be designed to accommodate a variety of functions and uses.



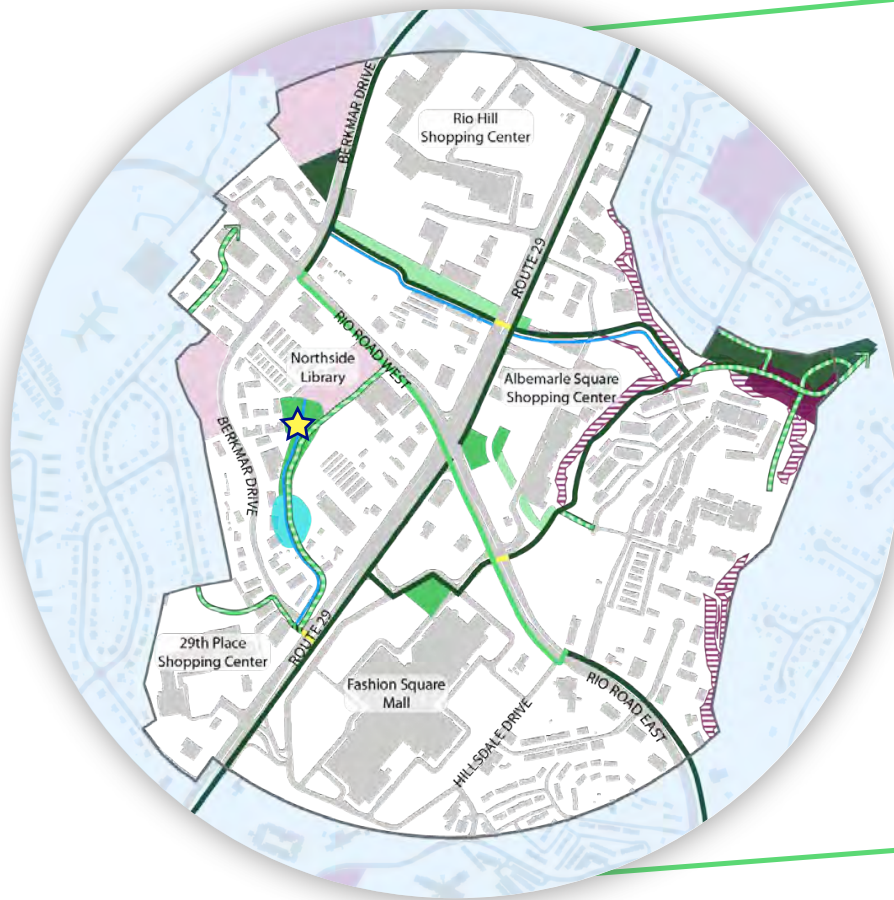
Murfreesboro, TN

## Exposed Stream

In highly urbanized areas, where streams are often buried, hidden, and forgotten, daylighting brings these buried waterways back to life by physically uncovering and restoring them as "exposed streams". They can assist communities in reducing polluted runoff, addressing flash flooding concerns, and improving the livability of the built environment.

# Conservation Plan

## FUTURE CONSERVATION NETWORK



### TRAIL TYPOLOGIES

#### SHARED-USE PATH (SUP)



#### TRAIL



#### TWO-WAY CYCLE TRACK OR SUP



### PUBLIC AMENITY SPACES

#### LINEAR PARK

#### PLAZA/GREEN

#### NATURAL AREA

#### FLOODABLE PARK

#### COUNTY-OWNED LAND

#### THE SQUARE\*

#### PEDESTRIAN CROSSING

#### EXPOSED STREAM

### CRITICAL RESOURCES

#### PRESERVED SLOPES

#### 100' STREAM BUFFER

\* The final location for the Square will be determined based on how the area redevelops, but it is anticipated that one of the identified plazas/greens will serve as The Square (see Page 35).

## ABOUT THE CONSERVATION NETWORK

County-owned property and critical resources provide the foundation for the Conservation Plan. The Plan highlights how underutilized County-owned properties can be re-imagined as key public amenity spaces, while also providing important ecosystem services to the surrounding area. The Conservation Plan shows a Conservation Network that is made up of Public Amenity Spaces, Trails, and Critical Resources. The Conservation Network is expected to be developed (and, in some cases, preserved) through a combination of public investment and private redevelopment activities.

The Plan recommends the protection of existing critical resources. Currently, all of the critical resources are within the northeast quadrant of Rio29. These consist of several preserved slopes along the northern and eastern periphery of the plan boundary, as well as a perennial stream just south of the Woodbrook Neighborhood. These areas should be protected with future development.

The Plan also recommends outdoor public amenity spaces within each quadrant of Rio29. Three of the four quadrants (northeast, northwest, and southwest) contain County-owned properties that provide stormwater treatment for adjacent development. The Plan envisions how these publicly-owned properties can be redesigned to become public amenity spaces for active, passive, and/or social recreational opportunities, all while continuing to treat stormwater runoff.

The Conservation Plan proposes a Linear Park in the Northwest quadrant and Plazas/Greens within the other three quadrants. There are two Natural Areas recommended in the northern quadrants and a Floodable Park proposed in the southwest quadrant.

One of the Plazas/Greens should serve as the Square or central amenity space for Rio29. The Square is intended to provide a space that can accommodate large gatherings and events, and should be associated with a civic facility such as a library or a school.

Another potential element of the Conservation Network is the green street. All streets in Rio29 are expected to include street trees, but some streets could be designed to have additional green amenities. Green streets are those that give priority to pedestrian circulation, open space, and/or stormwater treatment. Though specific streets are not identified on the plan as green streets, developers and the County should be encouraged to pursue green street designs where possible. Green streets could take the place of identified trails, shared use paths, or required open space, if these facilities are adequately incorporated into the design of the street.

# Prescriptive Designation of Public Space

Case Study: Columbia Pike Commercial Centers Form-Based Code



(Above) Photos of the Penrose Square development showing the completed eastern portion of public space and the undeveloped remaining portion below.

(Right) The Columbia Pike Commercial Centers Regulating Plan designating the area as public space.

Columbia Pike's Commercial Centers form-based code shows specific public spaces in the Regulating Plan. This approach requires the developer or property owner to construct public spaces where indicated on the Regulating Plan as part of their redevelopment project.

An example of this strict application can be seen with the Penrose Square development in Arlington (shown to the left). The public space shown in the Regulating Plan existed on two parcels. When the eastern parcel developed, half of the public space shown on the Regulating Plan was built and the remaining portion will be built at a future date.

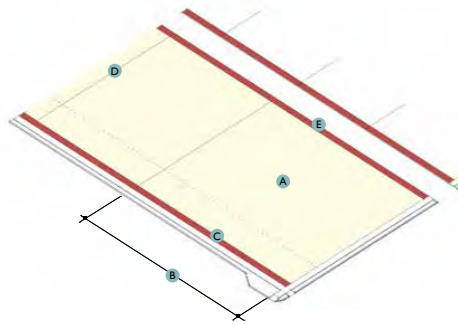
Link: <https://projects.arlingtonva.us/neighborhoods/commercial-form-based-code/>



# Green Space Percentage Based on Building Type/Location

Case Study: Virginia Beach Oceanfront Resort District

## Sec. 2.5 Mixed-Use Building



### Lot Criteria

Lot Dimensions	
A Area (min)	5,000 sq. ft.
B Width (min)	50'
Building Setbacks	
C *Building Setback, street (min)	Varies, see Chapter 3
D Building Setback, side or rear - common lot line (min)	0'
D Building Setback, side or rear - protected district (min)	10'
E Building Setback, alley (min)	5'

\*To meet foundation landscaping requirements, ensure that at least 66% of the width of all building facades adjacent to a street is set back no less than 3' from the ROW.

\*To meet street frontage landscaping requirements, ensure that surface parking lots and parking structures adjacent to a street are set back at least 10' from the ROW.

### Placement

Build-to Zone	
Build-to zone (min/max)	
F BW & CP Frontage.....	N/A
All other Frontages.....	street setback plus 10'
Percentage of lot width on which build-to zone applies (min)	
G BW & CP Frontage.....	N/A
SH Frontage.....	70%
All other Frontages.....	60%
Parking Location	
H **Parking Setback, street (min)	street setback plus 20'
Percentage of lot width on which parking setback applies (min)	
BW & CP Frontage.....	100%
SH Frontage.....	70%
GW Frontage.....	60%
BE Frontage.....	0% Structured/ 60% Surface
I Parking Setback, rear or side, common lot line (min)	0'
I Parking Setback, rear or side, protected district (min)	10'
Outdoor Amenity Space	
J % of lot area (min)	15%

Virginia Beach, Virginia's Oceanfront Resort District does not have specified locations for public spaces. Instead, it requires a minimum percentage of open space (known as minimum requirements for outdoor amenity spaces) based on building type.

For example, a "Mixed-Use Building" has several placement regulations, including a minimum of 15% of the lot area designated to outdoor amenity space.

This form-based code's use of "building type" is similar to the Rio29 Small Area Plan's character areas.

Link: <https://www.vbgov.com/government/departments/sga/projects/Documents/20171205-ORDFBC.pdf>

Required percentage of "outdoor amenity space"

# Hybrid Approach

## Case Study: Boulder Junction Form-Based Code

### Site Design

#### Outdoor Space Requirements



#### (p) Plaza.

The intent of the plaza is to provide a formal outdoor space of medium scale that may serve as a gathering place for civic, social, and commercial purposes. The plaza may contain a greater amount of impervious coverage than any other type of outdoor space regulated in this section. Special features, such as fountains and public art installations, are encouraged.

#### (q) Green.

The intent of the green is to provide an informal outdoor space of medium scale for active or passive recreation located within walking distance for building occupants and visitors. The green is intended to be fronted mainly by streets.

The Boulder Junction form-based code shows required public spaces in its Regulating Plan as well as specifications for space types.

The Regulating Plan requires outdoor spaces to be provided within 150 feet of the locations shown. The Site Design sections establish minimum outdoor space requirements, provide a table of outdoor space types and general design standards for each of these types.

The code also allows for public space sizes to be reduced for projects with limited developable acreage and access to nearby amenities (within 1/8-mile of all public entrances to the buildings of the development).

Link: [https://www-static.bouldercolorado.gov/docs/Boulder\\_Pilot\\_FBC\\_June\\_1\\_2016\\_final\\_draft\\_revised-1-201606010949.pdf?ga=2.135337521.1473480743.1567604889-290167043.1567604889](https://www-static.bouldercolorado.gov/docs/Boulder_Pilot_FBC_June_1_2016_final_draft_revised-1-201606010949.pdf?ga=2.135337521.1473480743.1567604889-290167043.1567604889)

#### PLAZA REQUIREMENTS

Dimensions	
Minimum Size	0.10 acres
Maximum Size	1 acres
Minimum Dimension	80 feet
Minimum Percentage of Street or Public Way Frontage Required	25%
Improvements	
Designated Sports Fields	Not permitted
Playgrounds	Not permitted
Fully Enclosed Structures	Permitted; may cover maximum 5% of plaza area
Maximum Impervious Surface + Semi-Pervious Surface	60%+ 20%
Maximum Percentage of Open Water	30%

#### GREEN REQUIREMENTS

Dimensions	
Minimum Size	0.25 acres
Maximum Size	2 acres
Minimum Dimension	45 feet
Minimum Percentage of Street or Public Way Frontage Required	100% for greens less than 1.25 acres; 50% for greens 1.25 or more acres in size
Improvements	
Designated Sports Fields	Not permitted
Playgrounds	Permitted
Fully Enclosed Structures	Not permitted
Maximum Impervious Surface + Semi-Pervious Surface	20% + 15%
Maximum Percentage of Open Water	30%

# Staff Recommendation

Staff recommends using the Rio29 Small Area Plan's Future Conservation Network Map to establish the basis for Rio29's required outdoor space components.

Through public engagement, staff heard feedback that the Future Conservation Network Map does not include sufficient green and public space to achieve the vision of Rio29 as "a vibrant, mixed use community enhanced through conservation and public amenities." Additionally, as established, this map would not meet the Small Area Plan's key outcome of "access to a quality amenity spaces within one-quarter (1/4) mile walking distance."

Staff recommends requiring a percentage of open/amenity space within each development, dictated by the property's character area. Space types may be selected from the table provided. Staff recommends that incorporating required green spaces and trail connections (per the Future Conservation Network Map) may be counted towards this requirement.

Staff recommends requiring construction of public space shown on the Rio29 Future Conservation Network Plan (Regulating Plan) at the time of redevelopment, with the following stipulations:

- Areas shown as public spaces in the Regulating Plan shall be dedicated for future public use. Open space dedicated to public use shall count towards the minimum required on-site open space. If a developer wishes to relocate the public amenity space to a different on-site location, this may be done through special exception, provided that the proposed design is consistent with the purpose and intent of the Small Area Plan vision and recommendations.
- A developer/property owner of a project may contribute cash-in-lieu of providing public space on-site to assist with off-site construction of a public amenity space, if it is within a certain radius of a public space shown on the Regulating Plan and below a certain size (in acres).

## How might this look for the Rio29 area?

The following page includes a table of public space types with brief descriptions and design standards. These were developed based on the Rio29 Small Area Plan's recommendations and desired amenities established through public engagement (Attachment 3).



Public Space Type	Description	Form + Amenities	Permitted Character Areas	Street Frontage Requirement	Acreage	Minimum Dimensions
Square	The Square is intended to function as the primary outdoor civic space for the Rio29 area. It should be designed to accommodate a variety of functions, including, but not limited to, event spaces and social open spaces that can be used for formal and impromptu gatherings. Space for passive recreation, outdoor games, farmers' markets, outdoor learning spaces, food trucks or other pop-up businesses/vendors, and/or small events or concerts.	The Square is expected to be an urban space with pavers, trees, and other landscaping treatments. It should be located at or near a prominent intersection, with bike and pedestrian access, surrounded by building fronts with active ground story uses in an intensely developed area. Amenities should include a central feature such as an amphitheater, event space, fountain, or prominent art installment. The space should also incorporate passive recreation areas, picnic shelters/shade canopies, seating areas, and planted elements.	Core	2 sides minimum	No larger 1 block per block size requirement	80-feet
Plaza	Plazas should function as passive open space to provide space for relaxing, sitting or strolling, as well as casual gatherings, picnics or organized events. Plazas should be framed by the surrounding buildings or roads on all sides and they should be designed in a way to provide connectivity to the greenway network and transit station.	Plazas should be designed as relatively flat open areas that can be paved or green. They can include planted space with native species, seat walls, benches, canopies, fountains, gathering space, art work (such as cooling art, functional art, traffic calming art), small amphitheater, gazebos, and/or spray grounds. Larger Plazas could also accommodate temporary event spaces, playgrounds, sports fields/courts, and active recreation (but this should not be the only amenity).	Core Flex	1 side minimum	0.25 - 2 acres	60-feet
Central Green	Like plazas, greens should function as passive open space to provide space for relaxing, sitting or strolling, as well as casual gatherings, picnics or organized events. Greens should be framed by the surrounding buildings or roads on all sides and they should be designed in a way to provide connectivity to the greenway network and transit station.	Greens should be designed as relatively flat, green, open areas using native species. They can include planted space, seat walls, benches, fountains, gathering space, art work (such as cooling art, functional art, traffic calming art), small amphitheater, gazebos, and/or spray grounds. Larger Greens could also accommodate temporary event spaces, playgrounds, sports fields, and active recreation (but this should not be the only amenity).	Core Flex	2 sides minimum	0.5 - 5 acres	80-feet
Linear Park/ Greenway	The linear park provides a swath of green space within an urban area that would not normally have such amenities. It should serve as an important link in the area's green network by providing connectivity to other amenities and trails. The linear park serves as an area for both active and passive recreation. The trail provides both an opportunity for walking, running, and cycling as well as space for sitting and relaxing.	The linear park should include both natural and developed features. Amenities can include a trail or walkway with wayfinding signage, information kiosks, seating areas, benches, or small play areas. The park can incorporate points of interest along its length such as art work or water features. A linear park can focus on natural amenities, where possible, such as a native plantings, streams or canopy trees.	Core Flex Edge	None	Not applicable	30-foot wide right-of-way
Floodable Park	The floodable park that is proposed for the southwest quadrant of Rio29 is currently a stormwater retention facility that is owned and operated by the County. The park is shown over a slightly larger area to incorporate some land from adjacent parcels so that when these properties re-develop, they have the option to use the facility for stormwater treatment. The additional land can provide more usable space for the park and increase the capacity of the retention facility. The floodable park can provide both active and passive recreation opportunities for residents of adjacent developments and patrons of the library. The park should be connected via trail to the library and the adjacent plaza. Other floodable parks can be incorporated into private developments and redevelopment in the area to meet the needs for private open space and stormwater management.	Floodable parks can be permeable hardscape surfaces and/ or natural greenspace. They can include both active/passive recreation facilities, such as play areas, fields, benches, picnic areas, plazas and walking trails. Floodable parks should be designed with some elevation change so that the water retention areas are lower in elevation. Proposed landscaping should incorporate flood-tolerant plants. The design should take into consideration long-term maintenance of proposed facilities and it should be designed to flood with minimum maintenance.	Flex Edge	None	0.5-acre minimum	60-feet
Native Plantings	Natural areas should function as an area for active recreation that accommodates walking, jogging and/or biking, plus passive uses such as relaxing or picnicking.	Natural areas should be mostly wooded and undeveloped. The space can include bicycle and pedestrian trails that allow for 5-15 minutes travel throughout the area. These areas may also include small improvements such as kiosks with trail maps, small parking areas, bike racks, and picnic tables or benches. Resource protection, native plantings and green infrastructure services should be considered with any proposed improvements.	Edge	None	0.5-acre minimum	Not applicable

\*Open water and impervious surface maximums are recommended and will be scoped at a future date.