

UNDERSTANDING COMMUNITY PLANNING FEATURES

**BEST PRACTICES
FOR TENNESSEE
COMMUNITIES**

**A Guide from the
Tennessee
Department of Health**



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The *mission* of the Office of Primary Prevention is to help Tennessee communities build a culture of health through livable and nurturing places and spaces so that everyone can reach their full potential.

The *vision* of the Office of Primary of Prevention is that everyone in Tennessee can make healthy choices wherever they live, learn, work, play and pray.

Spring 2020

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INTRODUCTION

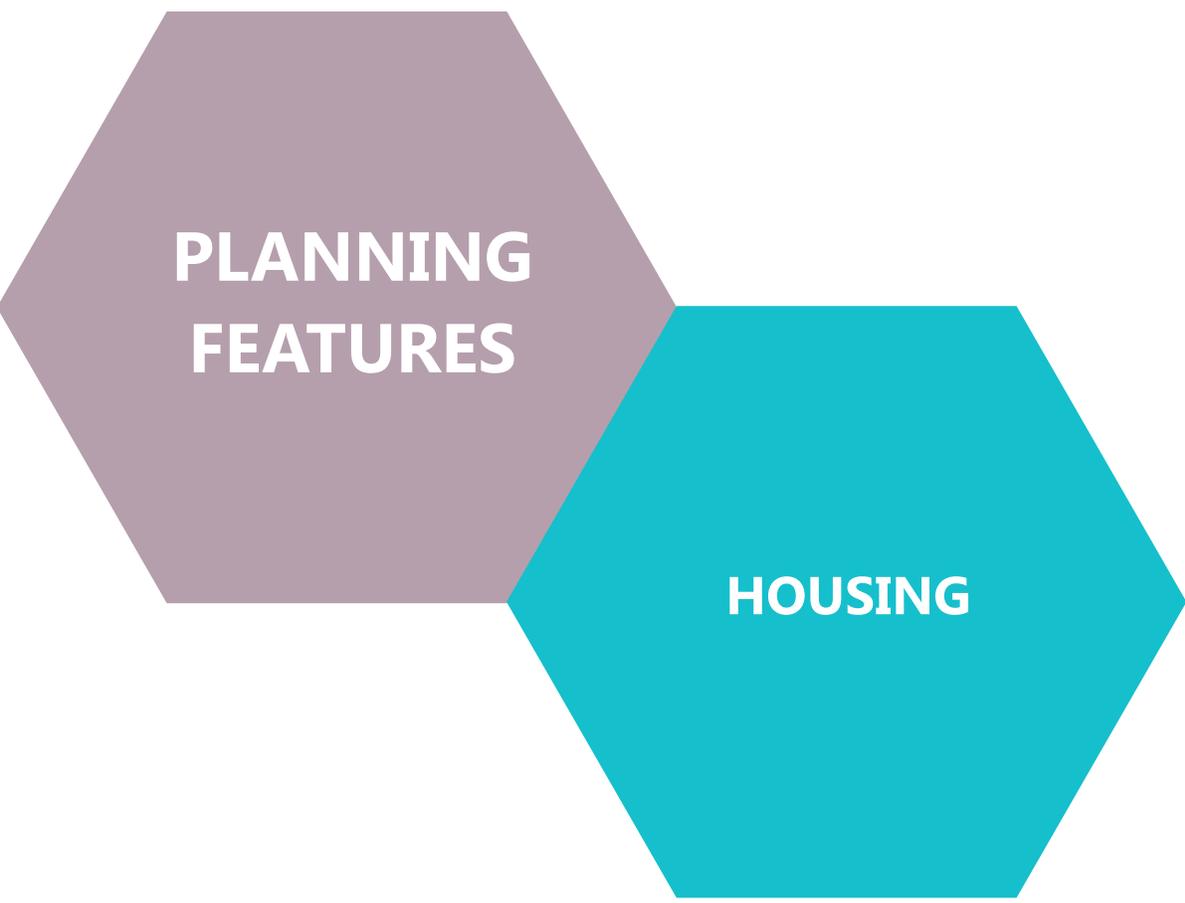
COMMUNITY
PLANNING FEATURES



The Tennessee Department of Health Office of Primary Prevention (OPP) provides resources and support to communities in efforts to create built environments that promote health. Since 2017, OPP has offered innovative, professional guidance towards creating a healthier Tennessee where all people can make healthy choices. The most recent addition to this suite of services, *Understanding Community Planning Features*, highlights community planning and design best practices from official land use, transportation, and community design standards. This publication outlines components and appropriate application considerations for local and regional leaders seeking to create healthy and livable places. Each section contains descriptions used by planning and urban design professionals, including brief commentary on funding, ownership, and regulatory policies.

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PLANNING
FEATURES

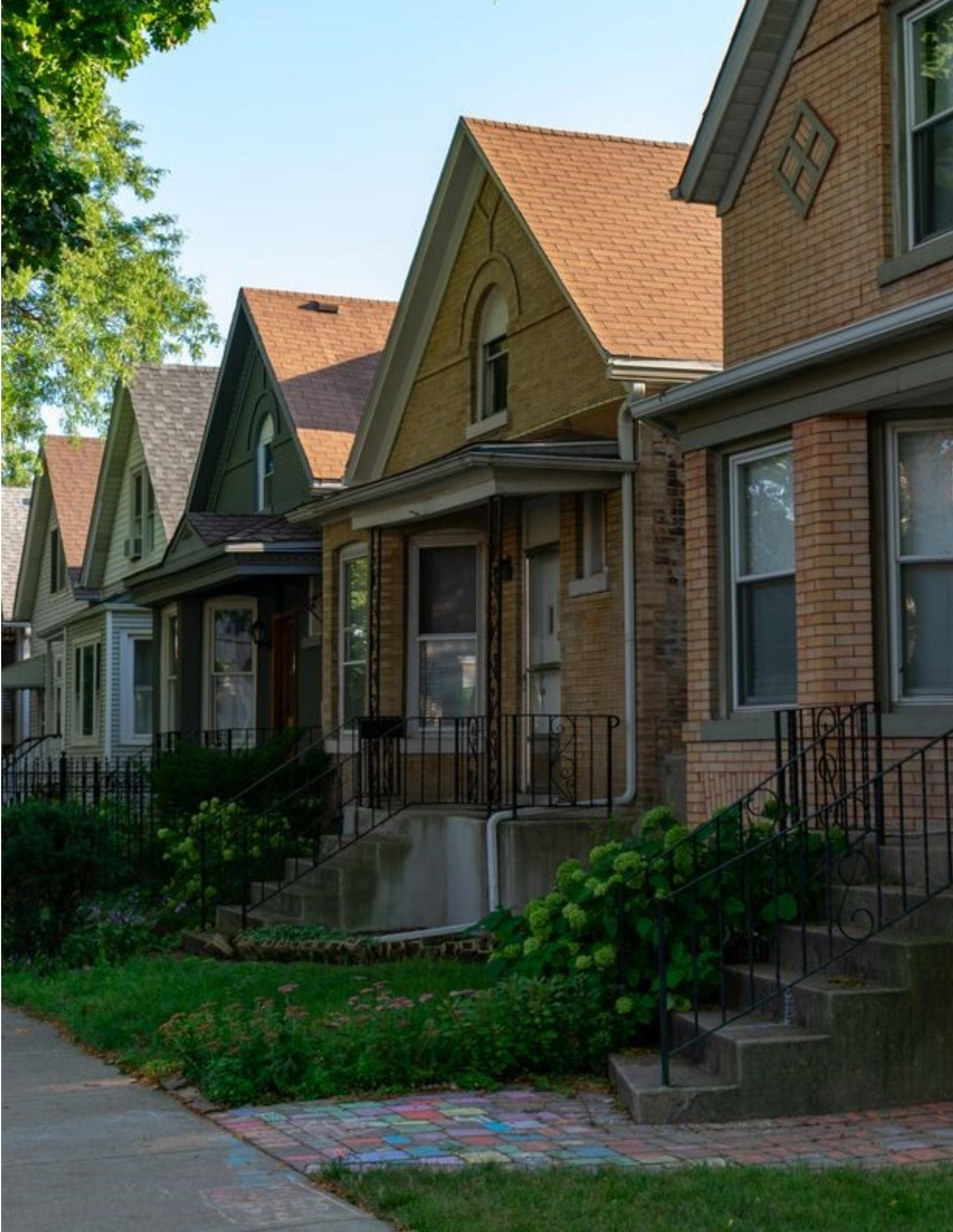
HOUSING

Housing is the cornerstone of any community. Supporting sufficient, safe, and affordable housing is a critical role for both community leaders and local planning professionals. There are nearly limitless forms, styles, and price points of housing to fit different community and economic needs. Local markets and contexts should be carefully considered when studying and planning for housing.

Ownership: Housing is primarily owned by private individuals, companies, or associations. Some cities however develop and manage affordable housing through local authorities.

Policy: Housing policies are guided by federal, state, and local policies, and all housing must adhere to all fair housing and anti-discrimination legislation. Cities must also follow health and building codes, typically managed by local governments.

Funding: Housing development is almost always privately funded through developers and homeowners. Public funding does exist, and usually takes the form of either tax benefits or direct funding for affordable housing construction and management. Increasingly, nonprofit organizations, such as land trusts, are providing housing funding to qualified persons.



SINGLE-FAMILY DETACHED



SINGLE-FAMILY ATTACHED

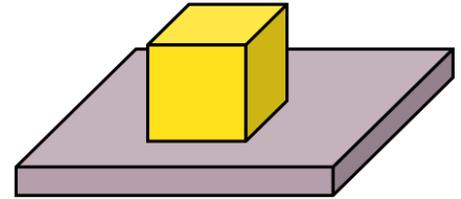


MULTI-FAMILY



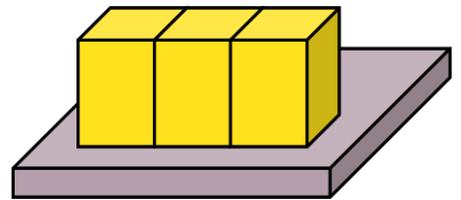
DESCRIPTION

Dwelling units that are physically separated from adjacent units, and typically located on their own lots.



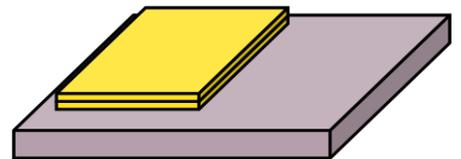
DESCRIPTION

Dwelling units that share common walls with adjacent, laterally attached units. Single family attached is different from multifamily in that attached units are not vertically stacked, have direct access to the outside, and do not share utilities with adjacent units.

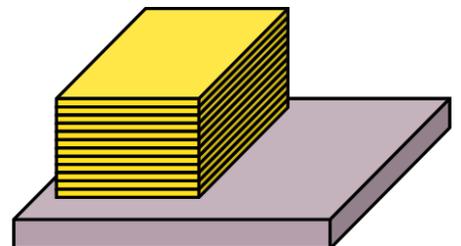
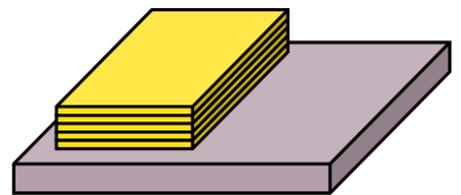


DESCRIPTION

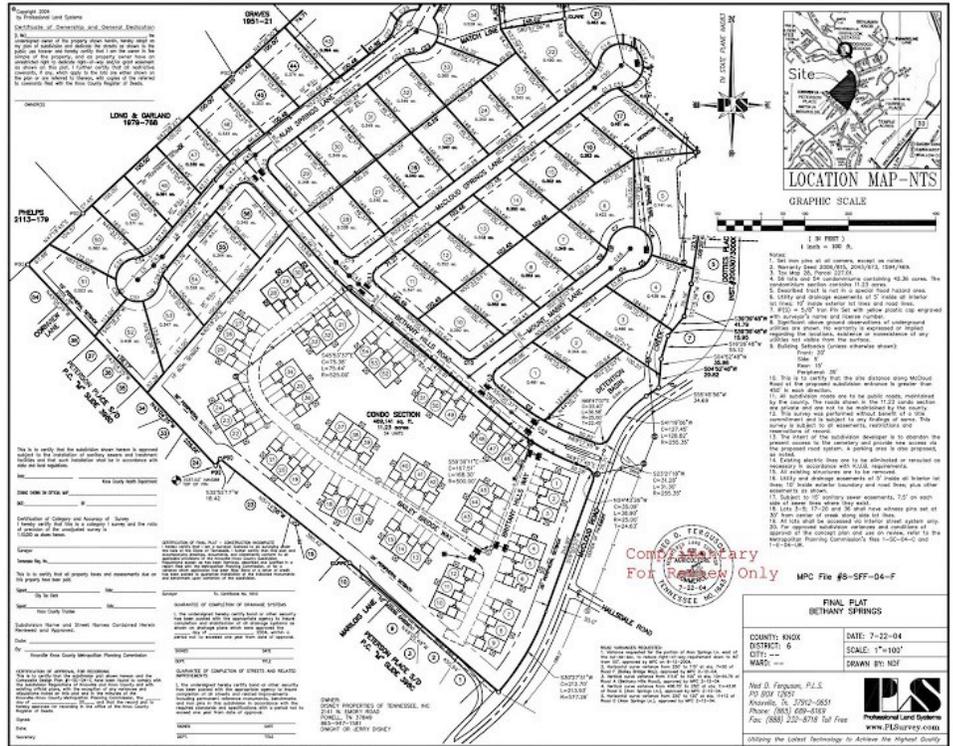
Multi-family housing are dwelling units that share common walls with units that are laterally and vertically adjacent.



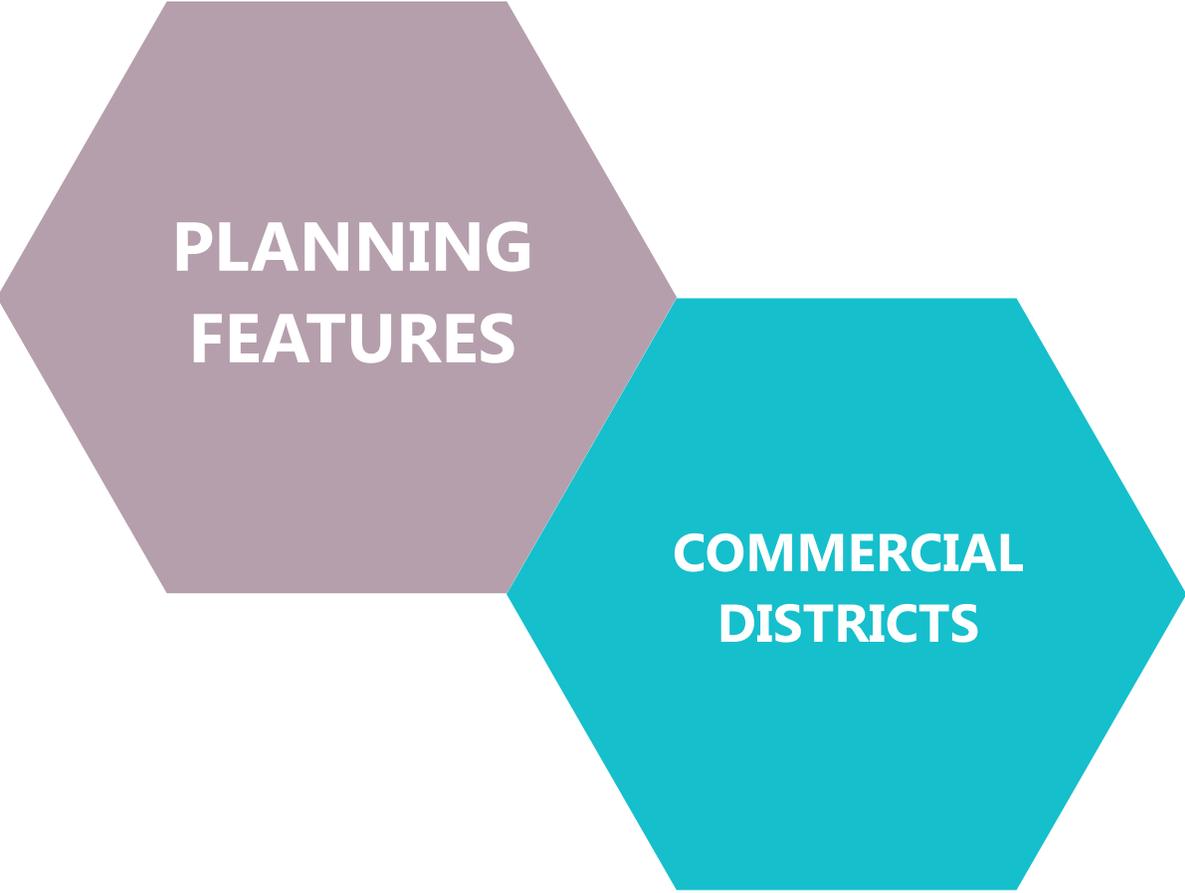
SUBTYPE	DESCRIPTION
Low -Rise	Generally range from two to four levels in height, with either structured or surface parking.
Mid-Rise	Generally range from five to twelve levels in height, most often with structured parking.
High-Rise	Generally range from twelve to fifty stories or more, and almost always contain structured parking.



SUBDIVISIONS



<p>DESCRIPTION</p>	<p>A parcel of land which has been divided up into smaller pieces (referred to as lots) usually for the purpose of building residential units to be sold at a later date. Subdivisions provide a chance to construct specific land use and design policies to guide development within the site.</p> <p>Subdivision maps are called “plats,” and contain drawings of land divisions and all associated streets, utilities etc.</p>	
<p>REGULATIONS</p>	<p>Subdivision regulations or ordinances guide the division and subsequent development of land. Local planning commissions are responsible for implementing and enforcing subdivision regulations.</p> <p>Subdivision regulations generally contain the following elements:</p>	
	<p>1. General Provisions</p>	<p>State what the jurisdiction hopes to accomplish with the ordinance, outlines definitions, and defines boundaries and exemptions.</p>
	<p>2. Review Procedures</p>	<p>Outline the procedure(s) for site review, which typically involves a preliminary and final plat review.</p>
	<p>3. Performance Guarantees</p>	<p>Describe developer performance guarantees included within the subdivision, typically in the form of a bond or line of credit tied to the deliverance on public improvements (such as sidewalks, street trees etc.).</p>
	<p>4. Vested right provisions</p>	<p>Outline the developer’s right to develop the subdivision even if final review has yet to happen. Vested rights are listed due to the common lag times between preliminary review, build out, and final review.</p>
	<p>5. Development standards</p>	<p>Address standards for site designs such as required lot sizes, street dimensions, inclusion of public space, and public infrastructure—roadway, utilities etc.</p>



PLANNING
FEATURES

COMMERCIAL
DISTRICTS

Long seen as the economic backbone of a community, commercial districts include varying types and scales of retail, offices, and restaurants. Commercial districts are often located within the denser areas of a community, and generally clustered together.

Ownership: Properties within commercial districts are generally privately owned the shops, with public entities owning the surrounding streets, sidewalks, parks and infrastructure.

Policy: Commercial district policies are generally created and managed at the local level via zoning, land use, and building code regulations.

Funding: There are numerous ways in which commercial development is funded, however most development is privately funded through a traditional development processes. Public funding may be dedicated for adjacent and supportive infrastructure via a capital improvement budget. Public tax or land incentives may also be offered to private owners in order to promote development. Increasingly common is the creation of local business improvement districts, in which local private entities create and financially support an entity that shares funding and maintenance responsibility of the given commercial area.



**CENTRAL BUSINESS DISTRICT
(CBD)**



SECONDARY BUSINESS DISTRICT



MIXED-USE DISTRICT



LOCAL BUSINESS DISTRICT



DESCRIPTION	SERVICE AREA
<p>The commercial and business center of a community, often associated with a city’s “downtown,” particularly in urban communities. CBDs generally contain the densest and tallest commercial and retail development, residential units. CBDs typically draw employees and visitors from across the city and region.</p>	<p>Entire city and region</p>

DESCRIPTION	SERVICE AREA
<p>Resembling a small-scale CBD, secondary commercial districts are often (but not always) located in outlying areas of a community, and serve local or regional commerce needs. Secondary commercial districts contain a diverse offering of goods and services, and increasingly contain residential units.</p>	<p>Surrounding city, and sometimes region</p>

DESCRIPTION	SERVICE AREA
<p>Combines vertical and/or horizontal mixed uses into a single, walkable, defined area often anchored by public spaces. The walkability of these areas are frequently benchmarked by a 10min, or ¼ mi distance from the area’s center.</p>	<p>Surrounding community</p>

DESCRIPTION	SERVICE AREA
<p>Typically smaller groups of convenience-based stores, including grocery and drug stores. Local districts are heavily dependent on those living in the surrounding neighborhood(s) and cater to local needs as a result.</p>	<p>Those living within a 10 -15min walking travel distance</p>

MAIN STREET



NEIGHBORHOOD BUSINESS DISTRICT



"SCATTERED" RETAIL



DESCRIPTION	SERVICE AREA
The primary retail street or district of small cities, towns, or villages. Tend to be the centrally located commercial and social area for these communities. Typical main street buildings are two to three stories and increasingly contain residential units above commercial uses.	Entire small city, town, or village.

DESCRIPTION	SERVICE AREA
Specially zoned business districts which provide commercial goods to a surrounding residential neighborhood/area. Most neighborhood districts include grocery, hardware, clothing, and other small shopping goods. Neighborhood districts generally contain more than three businesses.	Surrounding residential neighborhood(s)

DESCRIPTION	SERVICE AREA
Isolated retail such as corner stores, and seldom more than two or three stores grouped together. Most common in older urban and suburban communities or smaller rural centers. Heavily dependent on those living in the immediate surrounding area, and cater to neighborhood needs as a result.	~5-10 minute walking radius around the store

PLANNING
FEATURES

SHOPPING
CENTERS

Shopping centers have historically been major economic drivers in communities, providing both goods and employment. With changes in transportation and shopping behaviors shopping centers have evolved from suburban megamalls to the increasingly common mixed-use developments. Shopping centers come in nearly infinite forms and design, and are heavily driven by local economics.

Ownership: Shopping centers are privately owned, many of which by national or international real estate groups.

Policy: State and local land use, economic development, transportation, and employment policies heavily influence shopping center development, as does guidance from the International Council of Shopping Centers (ICSC).

Funding: Funding for shopping centers is almost always provided for by private developers and investors. Public funding may be dedicated for adjacent and supportive infrastructure via a capital improvement budget, or be offered in the form of tax incentives to promote development.



Rest N Go

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REVOLUTION

PARKING

CREPAIR

iPhone

iPad

Canon

Canon

STRIP/CONVENIENCE STORE



NEIGHBORHOOD CENTER



COMMUNITY SHOPPING CENTER



DESCRIPTION	AVERAGE SF	# OF ANCHOR STORES	ANCHOR STORE TYPE	# OF TENANTS
Attached row of stores or service outlets, managed as a single retail entity, with on-site parking usually located in front of the stores. A strip center has no enclosed walkways linking stores. Usually configured in a "I", "L", or "U" shape.	<30,000	0	N/A	<10

DESCRIPTION	AVERAGE SF	# OF ANCHOR STORES	ANCHOR STORE TYPE	# OF TENANTS
Shopping complex oriented around providing convenience and personal goods. Targets needs of the immediate surrounding neighborhood(s)	30,000-125,000	1+	Supermarket/Grocer	5-20

DESCRIPTION	AVERAGE SF	# OF ANCHOR STORES	ANCHOR STORE TYPE	# OF TENANTS
General merchandise or convenience- oriented offerings. Wider range of apparel and other soft goods than neighborhood centers. Usually configured in a straight line as a strip, or in an L or U shape depending on the site and design.	100,000-450,000	2+	Small anchor store (discount or junior dept store)	15-40

REGIONAL MALL



SUPER-REGIONAL MALL



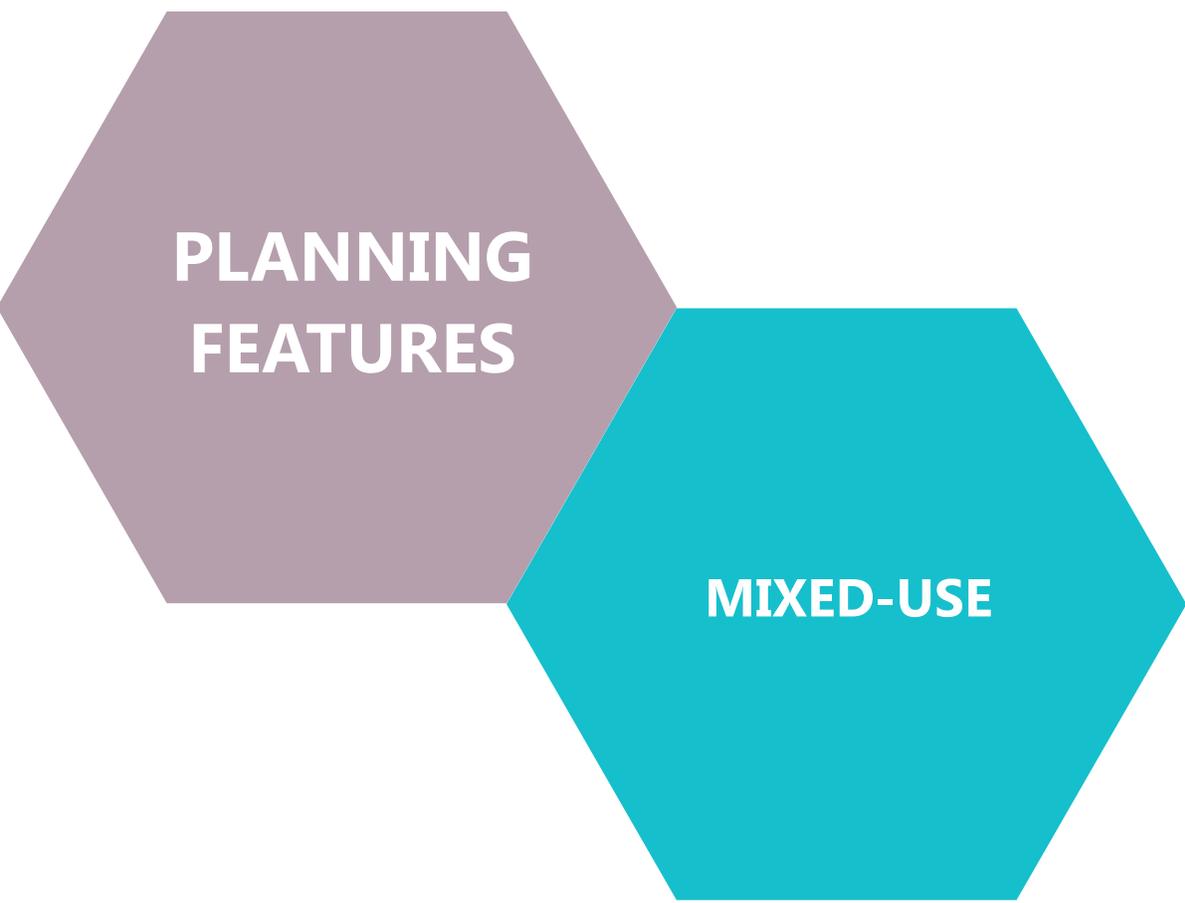
SPECIAL PURPOSE



DESCRIPTION	AVERAGE SF	# OF ANCHOR STORES	ANCHOR STORE TYPE	# OF TENANTS
General merchandise or fashion-oriented offerings. Typically enclosed with inward-facing stores connected by a common walkway. Exterior parking surrounds the perimeter.	300,000-800,000	1-2	Department	40-80 stores

DESCRIPTION	AVERAGE SF	# OF ANCHOR STORES	ANCHOR STORE TYPE	# OF TENANTS
Similar in concept and layout to regional malls, but offering a much larger variety and assortment of goods and materials.	800,000+	3+	Full-size department store	60+

DESCRIPTION	AVERAGE SF	# OF ANCHOR STORES	ANCHOR STORE TYPE	# OF TENANTS
Covers a large range of unique shopping centers, including outlet, "themed" or event centers, or national chains that integrate dining or entertainment.	75,000-600,000+	Varies	Varies	5-80



PLANNING
FEATURES

MIXED-USE

Unlike traditional single-use zoning, mixed use developments bring compatible land uses together. The best mixed-use projects foster walkable and vibrant spaces at the pedestrian scale, allowing for people to live, work, and recreate within one place.

Ownership: Mixed-use development is generally owned by private entities. Public or even nonprofit groups may however own or manage pieces of a mixed-use development, particularly public spaces and infrastructure.

Policy: Mixed-use policies are generally created and managed at the local level via zoning, land use, and building code regulations. Increasingly, transportation policies are promoting the presence of mixed-use development along public transit routes, or high density corridors.

Funding: Funding generally comes from private sources through a traditional development process. Public funding however is often used to encourage mixed-use development, typically through means of tax incentives and housing credits.



350 WEST
RESTAURANT

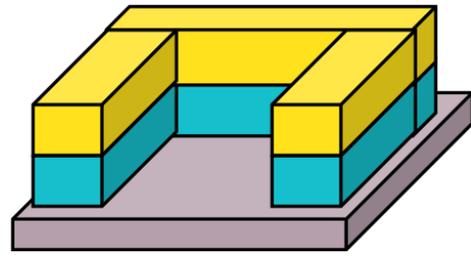
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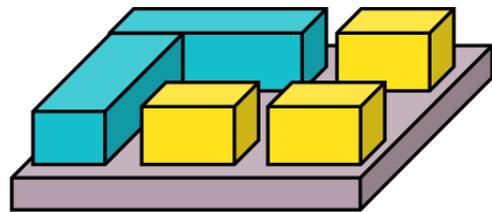
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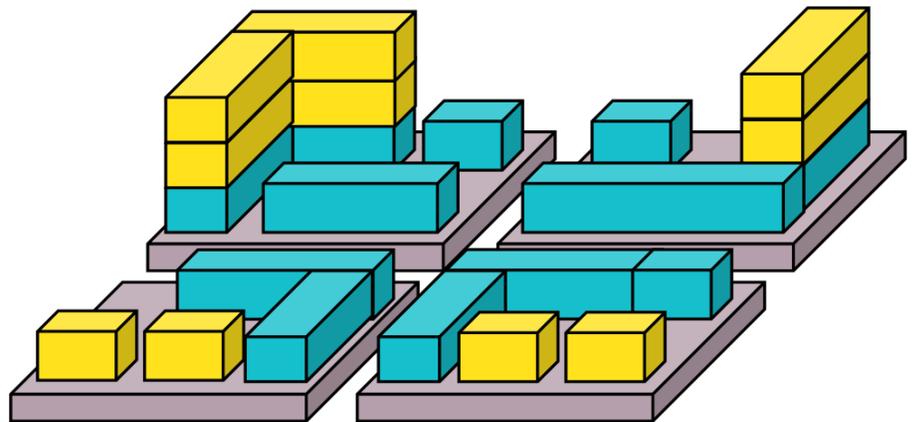
MIXED-USE DEVELOPMENT



Vertical mixed-use



Horizontal mixed-use



Mixed-use walkable area

-  *Commercial*
-  *Residential*

SUBTYPE	DESCRIPTION
Vertical Mixed-Use	Combines a mix of uses within a single building. Lower floors generally contain public and retail uses, with office or residential uses on above floors.
Horizontal Mixed-Use	Combines mixed-use developments with single-use buildings on the same distinct parcel. Horizontal mixed use tends to avoid financing and code complexities of vertical mixed-use buildings.
Mixed-Use Walkable Area (mixed-use district)	Combines both vertical and horizontal mixed uses into a single, walkable, defined area often anchored by public spaces. The walkability of these areas are often benchmarked by 10 minute, or ¼ mile distances from the area's center.

PLANNING
FEATURES

PARKS

Parks include several varieties of natural, semi-natural, or planted spaces designated for public recreation and enjoyment. Parks vary in size, scale, and role, but always include some degree of plants and/or nature. Some of the most well-functioning parks find ways to integrate human-made elements such as art, fountains, educational buildings, or recreation equipment into natural features. Increasingly, parks are being integrated into human-made developments in efforts to provide public and open spaces.

Ownership: Parks are traditionally owned by local, county, or state governments. Due to limited public funding, private and public-private parks are becoming more common.

Policy: Park policies are typically guided by local land use zoning, and/or land preservation efforts. Applicable state and federal legislation similarly guides park implementation and management.

Funding: Due to decreasing public funding, park funding is becoming more diversified between public, private, and nonprofit sources. The backbone of most public park funding continues to be from public sources.



NEIGHBORHOOD PARK



COMMUNITY PARK



URBAN/METROPOLITAN PARK



DESCRIPTION	SIZE (acres)	SERVICE AREA	APPLICATION
Basic units of a park system, serves the recreational and social purposes for 1-2 neighborhoods. Primary focus is informal recreation, and engaging visitors for a few hours.	3-5+ minimum 8-10 preferred	1/4- 1/2 mi radius	Centrally located within the service neighborhood and uninterrupted by major barriers (major roadways, natural features, etc), connected to the surrounding neighborhood via sidewalks or trails, and have careful balance of surrounding development to ensure greatest access to residential areas.

DESCRIPTION	SIZE (acres)	SERVICE AREA	APPLICATION
Broader than a neighborhood park, focuses on meeting community-based recreational needs for multi-neighborhood area. Preserves unique landscapes and open space. Intended to engage visitors for many hours or entire day, while several and diverse amenities are located throughout the entire park.	Varies, but 20-40 preferred	Multiple neighborhoods, or whole community for rural context.	Centrally located within community or multi-neighborhood service area, good road access. Connections to surrounding community via trails and sidewalks highly desirable – may be terminus for local or regional trail system. Direct connection to greenway also desirable.

DESCRIPTION	SIZE (acres)	SERVICE AREA	APPLICATION
Generally associated with larger urban centers containing large populations. Focus is on meeting a wide-range of community needs and preserve unique and extensive landscape and open spaces.	50+ Can be 1000+ in larger urban communities	Entire urban community	Centrally located within service area, good road access, connection to larger community via trails and sidewalks – may be terminus for local or regional trail system. Urban park planners must be mindful of transition and impacts of surrounding developments.

REGIONAL PARK



YOUTH ATHLETIC FIELD



COMMUNITY ATHLETIC COMPLEX



DESCRIPTION	SIZE (acres)	SERVICE AREA	APPLICATION
Large-scale, regionally based park and open space with primary goal of natural resource preservation and stewardship.	Varies, typically 100+	Multiple cities Often piece of larger park/trail system	Natural resources and landscapes generally form the basis and context for a regional park. Good road access and connections to surrounding cities and regions, particularly via trails is desirable. Are often the terminus for local or regional trail system.

DESCRIPTION	SIZE (acres)	SERVICE AREA	APPLICATION
Youth-based athletic fields with programs and associated facilities. Strategically located throughout a community, and may also support neighborhood parks. Generally includes conveniences such as parking, restrooms, and concessions.	20-40 preferred	Serves large portions of medium and large communities, or an entire small community	Relatively flat with access to/from major thoroughfares, adequate buffering from any surrounding residential areas. Connection to larger park network and residential areas via trails and sidewalks strongly desirable.

DESCRIPTION	SIZE (acres)	SERVICE AREA	APPLICATION
Consolidated programming of adult <i>and</i> youth athletic facilities. Strategically located throughout a community with tournament level services and facilities. Generally includes conveniences such as extensive parking, restrooms, concessions, and spectator seating areas.	20-80 preferred	Entire community, or multiple cities for suburban and rural contexts	Relatively flat with access to/from major thoroughfares, adequate buffering from any surrounding residential areas, connection to larger park network & residential areas via trails and sidewalks strongly desirable.

SPECIAL USE



SCHOOL PARK



POCKET PARK



DESCRIPTION	SIZE (acres)	SERVICE AREA	APPLICATION
Catch-all phrase covering a broad range of <i>generally</i> (though not always) single-use parks including: nature centers, historic sites, town squares, aquatic centers, campgrounds, and golf courses. Service area varies based on use, but often covers area larger than a single neighborhood.	Varies	Varies	Application is driven by market and community demands, but should consider relation to surrounding residential or commercial areas, and access via sidewalks, trails, or roadways.

DESCRIPTION	SIZE (acres)	SERVICE AREA	APPLICATION
School site that is also used in support of, or in lieu of, neighborhood or community parks. Park-school sites may provide open green space, community running/walking track, and playgrounds, but may also offer indoor recreational services. Joint use agreements are often required.	Varies	Usually single to multiple neighborhoods	Relatively flat parcel, access to/from major thoroughfares, connection to larger park network & residential areas via trails and sidewalks strongly desirable.

DESCRIPTION	SIZE (acres)	SERVICE AREA	APPLICATION
Small outdoor space, generally providing any number of supportive services such as gathering space or seating, to a surrounding commercial area.	≤ 3/4 acre	Immediate surrounding 1-3 blocks	Typically utilized in smaller, underutilized land, on-street parking, or irregular pieces of land. Should have appropriate amounts of surrounding retail or commercial uses to support programming. Should be easily accessible via walking and biking, and have clear and open transitions between the park and surrounding uses.

GREENWAY (sometimes called
parkway or *linear park*)



DESCRIPTION	SIZE (acres)	SERVICE AREA	APPLICATION
Land set aside for preserving natural resources, while providing active transportation connectivity. Sometimes known as a linear park.	Varies	Varies, but typically 1/2-1 mi along entire route	Varies depending on community character, connectivity needs, and desired natural preservation.

PLANNING
FEATURES

ROADWAY
TYPES

Roads are among the most crucial component of community design, as they provided the connective infrastructure to allow for the movement of people to and through a given area. While the best designed roads consider usage by all user types (automobile, transit, bicycle, and pedestrian), roads are classified based largely on vehicle capacity and intended usage. Street capacity and volume is measured using Average Annual Daily Traffic (AADT).

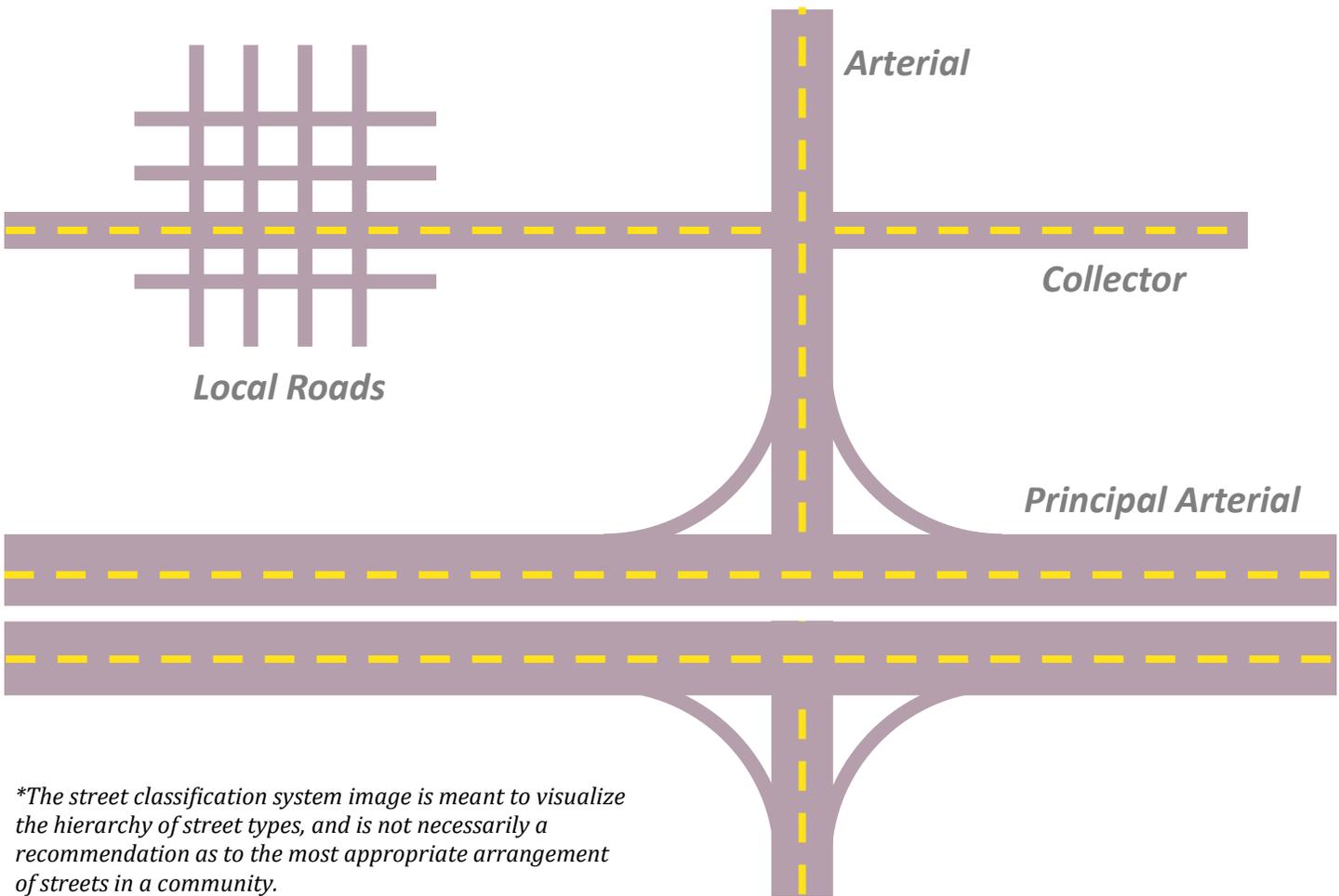
Ownership: Roadway ownership varies between federal, state, county, and local jurisdiction, depending on classification type and roadway role.

Policy: The majority of roadway policies (particularly design) is crafted by the Federal Highway Administration (FHWA). State, county, and local bodies also craft and implement policies, but generally must adhere to FHWA guidance.

Funding: Due to the high costs typically associated with roadway design and repair, roadway funding is often a mix of federal, state, county, and local sources. It is common for federal and/or state funds to be used on a roadway project regardless of roadway ownership.



Street classification*



*The street classification system image is meant to visualize the hierarchy of street types, and is not necessarily a recommendation as to the most appropriate arrangement of streets in a community.

ARTERIAL

SUBTYPE	DESCRIPTION	OWNERSHIP
Principal Arterial*	Provides long-distance and continuous routes <i>between</i> major centers. Typically carry high volume traffic and high speeds, and make up the integrated network of continuous routes within rural areas.	Federal or state
Minor Arterial	The backbone of most street networks, provides continuous routes through community centers. Contains most of a city's commercial and industrial uses by providing access without penetrating into neighborhoods. In rural areas, minor arterials are spaced with and follow population densities. Despite making up only 10% of street mileage, minor arterials account for more than 50% of all roadway traffic.	Typically state

*while FHWA does consider interstates, freeways, and expressways as their own classification, this publication combines them within Principal Arterials

COLLECTOR

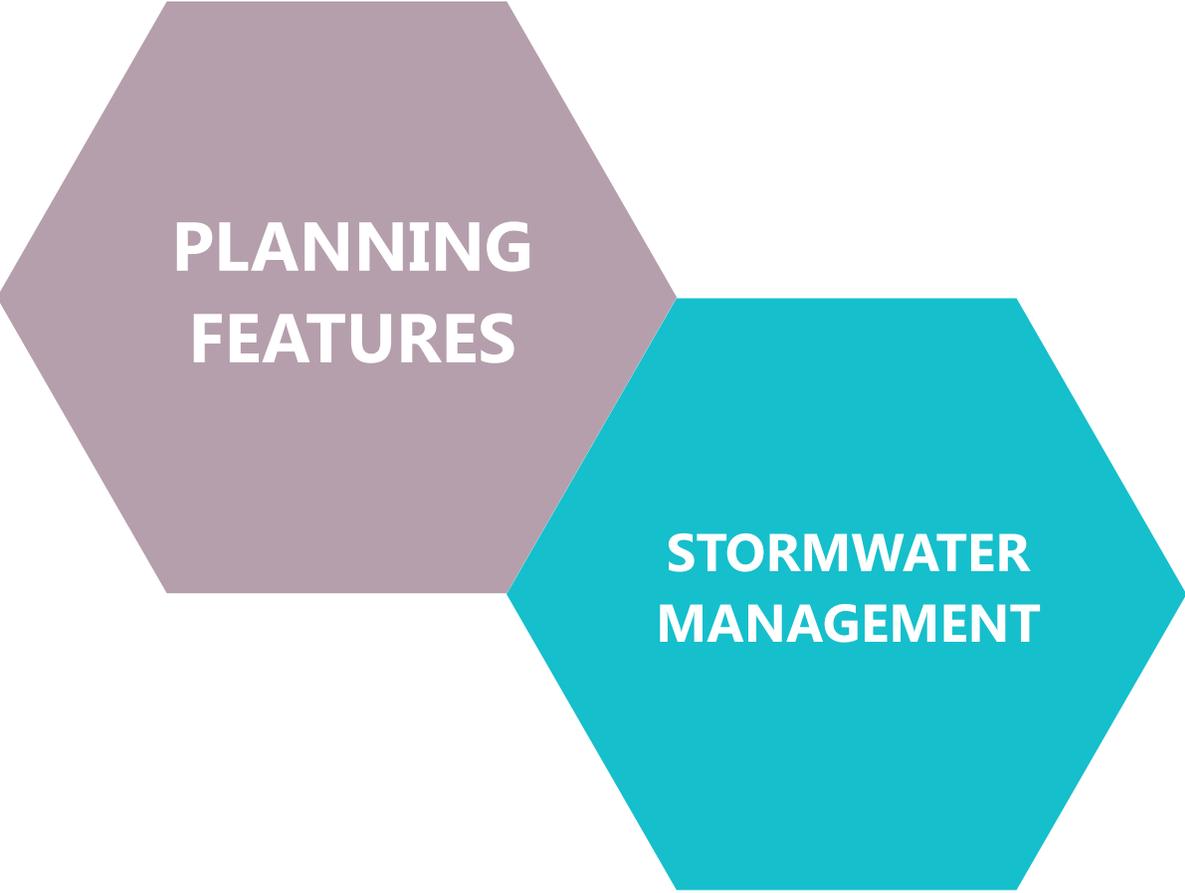
DESCRIPTION	OWNERSHIP
Act as minor “tributaries”, gathering traffic from several smaller areas and feeding it into larger arterials. Unlike arterials, collectors often penetrate into residential neighborhoods. In rural areas, collectors generally follow population density. Collectors are often bordered by properties with driveway access.	Typically county or local

LOCAL

DESCRIPTION	OWNERSHIP
Intended for short travel distances, usually through residential communities, local roads feed into collector roads. Often contain traffic control devices to balance vehicle and pedestrian usage. Local roads account for 90% of all road mileage but carry just 10% of total vehicle miles.	Almost always local or county

STREET CLASSIFICATION FEATURES

STREET TYPE	AADT		LANE WIDTHS	AVE SPEEDS
	URBAN	RURAL		
Principal Arterial (Interstate)	35,000-129,000	12,000-34,000	12 ft	60+ mph
Principal Arterial	7,000-27,000	2,000-8,500	11-12 ft	60+ mph
Minor Arterial	3,000-14,000	1,500-6,000	10-12 ft	55+ mph
Collector	1,100-6,300	300-2,600	10-11 ft	45-55 mph
Local	50-400	80-700	9-10 ft	20-30 mph



PLANNING
FEATURES

STORMWATER
MANAGEMENT

Stormwater management refers to the efforts of reducing water runoff in order to improve water quality and reduce flood risks. Typical land development creates “impervious surfaces,” or surfaces unable to absorb water. As a result, higher percentages of rainwater are transferred to runoff rather than absorption or evaporation. Plants and trees play an important role in managing runoff by aiding in water filtration and absorption. Further, integrating plants and trees into stormwater management bolsters community aesthetics, improves the pedestrian experience, and raises adjacent land values.

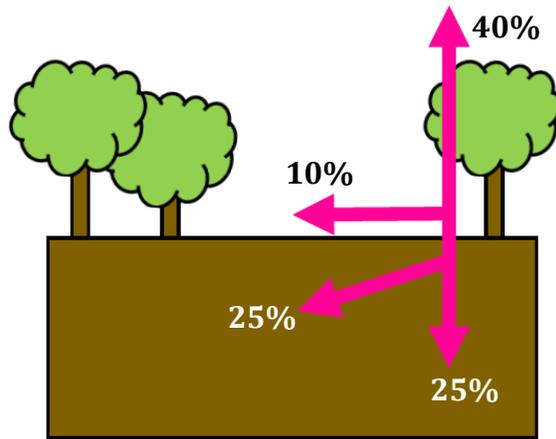
Ownership: Stormwater infrastructure is typically publicly owned and maintained by the city or county. However, an increasing amount of new development projects are integrating privately owned and maintained stormwater infrastructure.

Policy: Stormwater management policies are typically created by a local city or county, but are supported by federal law. The city or county is responsible for implementation.

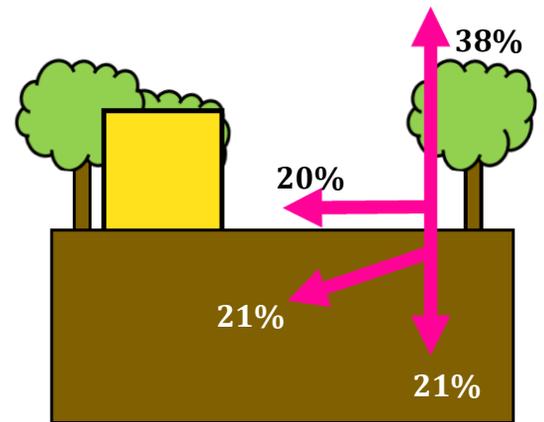
Funding: Funding for public stormwater infrastructure is typically a line item in a city or county annual capital improvement budget.



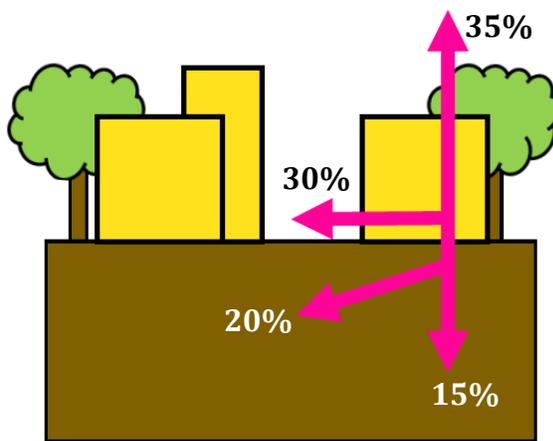
Average rainwater runoff and absorption percentages



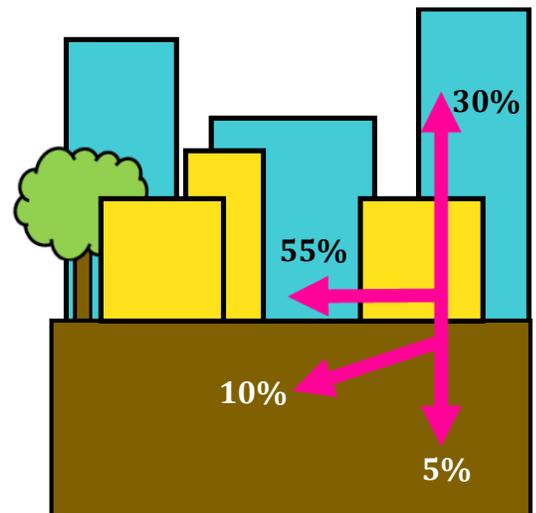
Natural



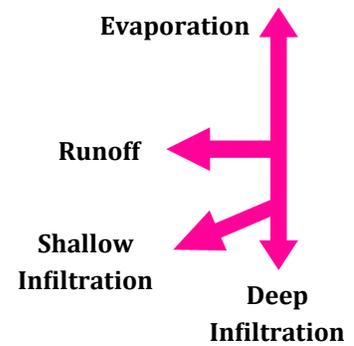
Low density



Medium density



High density



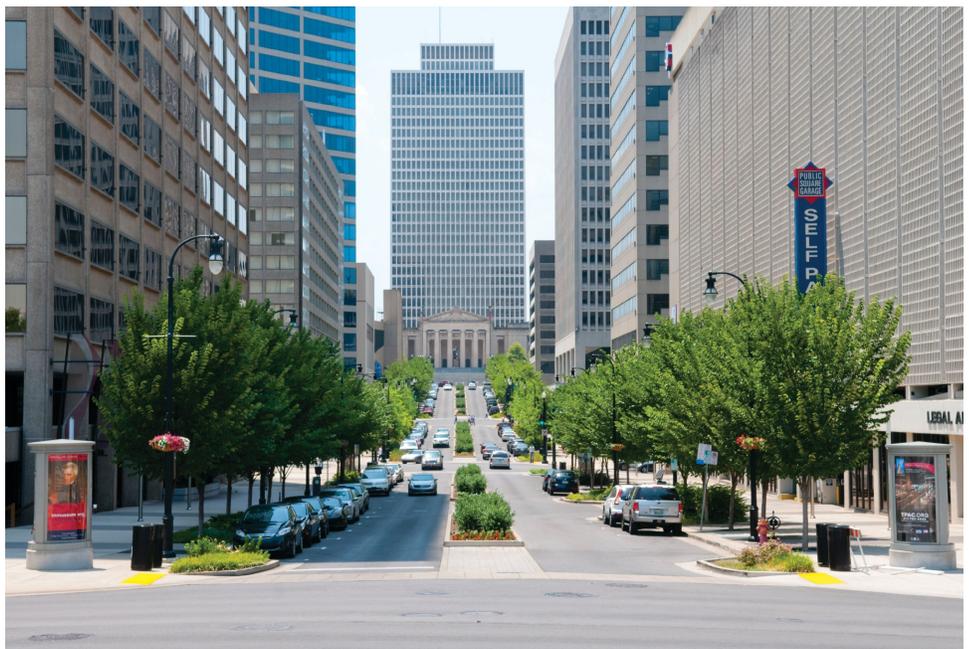
IMPERVIOUS SURFACES

DESCRIPTION	DEVELOPMENT LEVEL	IMPERVIOUS COVERAGE
Impervious surfaces are any surfaces unable to absorb water, thereby causing rainwater to collect pollutants and/or flood. Common impervious surfaces include sidewalks, parking lots, streets, and roofs. Common materials include concrete, asphalt, and brick.	Natural	0% coverage
	Low density	10-20%
	Medium density	30-50%
	High density	75-100%

BIOSWALES



STREET TREES



DESCRIPTION	DIMENSIONS	APPLICATION
Bioswales are linear, vegetated, channels that collect and filter rainwater, and are intended to replace standard concrete gutters. Depending on size and depth, a wide variety of plants and trees may be incorporated into a bioswale. Soil, mulch, and rocks are utilized to help collect and filter pollutants while recharging groundwater.	Varies depending on location , vegetation, and intended rainwater capacity. Rainwater entrance cuts spaced every 3-5 ft	Bioswales have flexible siting requirements, but have the greatest impact when placed alongside or within impervious surfaces, such as parking lots and roadways. Can also be incorporated along pedestrian crossing to improve aesthetics and safety.

SUBTYPE	SIZE	RECOMMENDED SOIL VOLUME*	SPACING**
Small	<30 ft height <20ft crown diameter	400-600 cu ft	15-20 ft on center
Medium	30 - 70 ft height 20-35ft crown diameter	600-900 cu ft	20-25 ft on center
Large	70 ft >35ft crown diameter	900-1200cu ft	≥35ft on center

*City requirements vary, and recommended soil size may vary for trees that share soil volume. Street trees require a minimum depth of 3ft of soil. The dug hole should be 2-3 times tree root ball size.

**Tree spacing must adhere to all relevant site line requirements, particularly at intersections.



PLANNING
FEATURES

TRAFFIC CALMING

Traffic calming refers to alterations to an existing roadway design with the intent of making the roadway safer and more efficient for all users. Traffic calming may include permanent or semi-permanent materials. Semi-permanent “pilot” interventions can be utilized to inform permanent and more expensive future changes. While traffic calming is effective for roadway safety, planners must be mindful of emergency medical service (EMS) and transit routes, as certain interventions may impede these services.

Ownership: Traffic calming measures and designs are typically managed by whichever jurisdiction owns and manages the roadway (federal, state, county, or local).

Policy: Most traffic calming policies are a combination of local, state and federal policies and are based on Federal Highway Administration’s *Manual on Uniform Traffic Control Devices* (MUTCD or the “Green Book”).

Funding: Funding for traffic calming nearly always comes from whichever jurisdiction owns and manages the roadway (federal, state, county, or local).



SPEED HUMP



SPEED TABLE



SPEED CUSHION



DESCRIPTION	DIMENSIONS	APPLICATION
Raised, rounded “humps” placed across a travel lane to slow traffic speeds. Speed humps often put significant stress on passing vehicles as they cross over the hump.	Recommended height of 3 in to 4 in, with a width spanning the entire travel lane.	Most appropriate for roads with low daily traffic volume (<4000 AADT). Roadway design speeds should be <30mph, and ideally 15-20mph. Generally not appropriate for EMS or transit route.

DESCRIPTION	DIMENSIONS	APPLICATION
Raised, flat-top platform generally long enough that both sets of vehicle tires are on the platform at the same time. Unlike speed humps, speed tables generally have less stress placed on the vehicle as it passes over.	Recommended height of 3 in to 4 in, with a width spanning the entire travel lane Speed table length generally between 10 ft and 20 ft	Most appropriate for roads with low daily traffic volume (<4000 AADT). Roadway design speeds should be less <30mph, and ideally 15-20mph. Generally not appropriate for EMS or transit route.

DESCRIPTION	DIMENSIONS	APPLICATION
Consists of two or more raised, often flat topped, platforms placed across the travel lane. Speed cushions are different from speed tables in that they have gaps, also called “cutouts,” between the raised segments to allow for EMS vehicles with wide tracks to pass through without interference.	Recommended height of 3 in to 4 in, with sections no wider than 7 ft Cutouts are approximately 3 ft wide	Most effective at a midblock location, and not less than 200 ft from an intersection. Most appropriate for roads with low daily traffic volume (<4000 AADT). Roadway design speeds should be less <30mph, and ideally 15-20mph. May accommodate light EMS and transit route traffic.

RAISED CROSSWALK



RAISED INTERSECTION



TEXTURED SURFACES



DESCRIPTION	DIMENSIONS	APPLICATION
<p>A variation of speed tables, raised crosswalks are designed and marked for pedestrian crossings. Raised crosswalks bring the street up to sidewalk level, increasing the visibility and safety of pedestrians. No cutouts are included in raised crosswalks.</p>	<p>Height should be the same as adjacent sidewalks, with a width spanning curb to curb across the roadway.</p>	<p>Raised crosswalks may be utilized at intersections or at midblock crosses. May be used on residential, collector, or arterial streets with less than 35mph, and that aren't EMS or transit routes. While some communities have set traffic volume maximums for raised crosswalks, there is not a uniform recommended amount for appropriate usage.</p>

DESCRIPTION	DIMENSIONS	APPLICATION
<p>Like raised crosswalks, a raised intersection is a raised yet flat-topped area covering an entire intersection, with ramps on all approaches. Raised intersections typically bring the whole intersection up to sidewalk level.</p>	<p>Height should be the same as adjacent sidewalks, with lead-in ramps approximately 6 ft in length.</p>	<p>Most appropriate in denser urban intersections, at locations with full sidewalk networks speeds ≤ 35mph, and AADT between 4,000-10,000 (depending on context)</p>

DESCRIPTION	DIMENSIONS	APPLICATION
<p>Any change in the texture of the roadway from traditional asphalt, usually incorporating materials (or stencils) such as brick and pavers. The change of material generally signifies the need to slow speed and/or be aware of increased pedestrian presence.</p>	<p>Varied lengths, but textured surfaces are often used within an intersection, or throughout special districts (such as commercial or historic districts). Should span the entire roadway from curb to curb.</p>	<p>Most appropriate in intersections and special districts with speeds no ≤ 30mph, and medium to high pedestrian activity.</p>

TRAFFIC CIRCLE



ROUNDBABOUT



REALIGNED INTERSECTION



DESCRIPTION	DIMENSIONS	APPLICATION
<p>A (usually) raised circular island located in the center of an intersection, and around which traffic must circulate. Yield signs should be placed at all four approaches to indicate caution when entering the intersection. May need splitter islands depending on lane widths.</p>	<p>Varies, but must ensure adequate travel lane and turning radii widths</p>	<p>Most appropriate for intersections of two way, two-lane roads with low daily traffic volume (<4000 AADT), and roadway design speeds ≤30mph. Not appropriate for EMS or transit route.</p>

DESCRIPTION	DIMENSIONS	APPLICATION
<p>Large raised circular island located in the center of higher-volume intersections. Yield signs must be placed at all approaches to indicate caution when entering the intersection. Roundabouts are different than traffic circles in that travel lanes are designed to follow the curved form of the center island, and may accommodate two or more travel lanes in each approach. Roundabouts remove the need for traditional traffic signals.</p>	<p>Varies, but must ensure adequate travel lane and turning radii widths</p>	<p>Most appropriate at the intersections of collector and/or arterial streets. Can be appropriate at any level of traffic volume, with multi-lane roundabouts accommodating AADT up to 60,000. Appropriate for EMS and transit routes.</p>

DESCRIPTION	DIMENSIONS	APPLICATION
<p>Involves the realignment of the straight approach in a “T-intersection”, to incorporate a curve at the intersection, thereby creating a skewed approach.</p>	<p>Varies, but must ensure adequate travel lane and turning radii widths</p>	<p>Appropriate only at T-intersections, and typically for roadway design speeds of ≤25mph. Appropriate for EMS and transit routes as long as appropriate turning radii is ensured.</p>

CURB EXTENSION
(also called *pincher*, or *choker*)



BUMP OUT
(also called *bulb out* or *corner extension*)



CENTER ISLAND/MEDIAN



DESCRIPTION	DIMENSIONS	APPLICATION
A horizontal extension of the curb and/or sidewalk into the travel lane, which narrows the road width. Curb extensions are generally only located at midblock locations, and may be incorporated with midblock crosswalks to reduce pedestrian travel distances.	Varies so long as extensions maintain sufficient travel lane widths.	Appropriate for nearly all speeds and traffic counts, provided sufficient lane widths kept. Can be used on all roadway types. Appropriate for EMS and transit routes assuming sufficient travel lane widths.

DESCRIPTION	DIMENSIONS	APPLICATION
Horizontal extension of curbs and/or sidewalks into the travel lanes within an intersection. Unlike conventional curb extensions, bump outs are used solely within intersections.	Varies so long as extensions maintain sufficient travel lane widths and turning radii.	Appropriate for nearly all speeds and daily traffic counts, provided adequate lane widths and adequate vehicle turning radii. Can be used on all roadway types. Appropriate for EMS and transit routes assuming sufficient travel lane widths and turning radii.

DESCRIPTION	DIMENSIONS	APPLICATION
Raised island located along the centerline of the street, narrowing travel lanes and the total street width. Center islands may also be combined with mid-block crosswalks for improved pedestrian usage.	Varies so long as roadway maintains sufficient widths for continual traffic flow	Appropriate for most speeds, center islands are on average used for roadways with design speeds of ≤ 45 mph. Can be used at midblock locations, or in lead-ups to an intersection. Appropriate for EMS and transit routes assuming sufficient travel lane widths.

CHICANES



DESCRIPTION	DIMENSIONS	APPLICATION
<p>The implementation curb extensions on alternating sides of the street, resulting in an S-shaped travel lane curve. A similar effect may be created by alternating on-street parking zones.</p>	<p>Varies so long as extensions maintain sufficient travel lane widths.</p>	<p>Appropriate for the speed limit of ≤ 35 mph roads with low daily traffic volume (< 4000). Can be used on a one-lane one-way, and two-lane, two-way roads. Generally not recommended for EMS or transit routes.</p>

PLANNING
FEATURES

PEDESTRIAN
INFRASTRUCTURE

Pedestrian infrastructure encompasses a series of features including sidewalks, paths, crosswalks, and even connective public spaces. Typically, pedestrian infrastructure is located within the public right-of-way, which includes all the publicly owned space between building fronts.

Ownership: Most pedestrian infrastructure is publicly owned. Private ownership is not uncommon though, particularly for connective infrastructure located within a private property (such as alleys).

Policy: Pedestrian infrastructure policy and design is guided by several federal guidelines, particularly the American with Disabilities Act (ADA) accessibility requirements. Many local communities have policies around pedestrian infrastructure, such as pedestrian network buildout and construction requirements. Sometimes larger communities require new developments to build sidewalks, or pay an “in lieu of” fee.

Funding: Funding for pedestrian infrastructure is generally part of a local community’s capital improvements budget. In the case of infrastructure integrated within a new development, funding may come from private or other public sources.



SIDEWALKS + APPLICATION



DESCRIPTION	DIMENSIONS	APPLICATION
A paved path designated for pedestrians, often located alongside a roadway. May be separated from the street by a grass or paved space, or located along the “curbface” directly along the street. Sidewalks are characterized by three “zones”: Planter/Furniture, Pedestrian Travel, Building Frontage	5 ft minimum width required, 6 ft if located along curb At designated “passing” locations, at least 60 in of clearance needed on all sides. All dimensions must adhere to ADA guidelines	Sidewalks should be considered within most developed areas, and especially in and around residential areas. Sidewalk design is often driven by the surrounding context and land uses, with consideration for grade, cross slop, width, and passing space.

ROADWAY CLASSIFICATION AND LAND USE	SIDEWALK/WALKWAY	FUTURE PHASING REQUIREMENTS*
Rural Highways (< 400 ADT)	Shoulders preferred, with minimum of 3 ft.	Secure/preserve right-of-way (ROW) for future sidewalks.
Rural Highways (400 to 2,000 ADT)	5 ft shoulders preferred, minimum of 4 ft required.	Secure/preserve ROW for future sidewalks.
Rural/Suburban Highway (ADT > 2,000 and less than 1 du**/acre)	Sidewalks or side paths preferred. Minimum of 6 ft shoulders required.	Secure/preserve ROW for future sidewalks.
Suburban Highway (1 to 4 du/acre)	Sidewalks on both sides required.	N/A
Arterial (residential)	Sidewalks on both sides required.	N/A
Urban Collector and Minor Arterial (residential)	Sidewalks on both sides required.	N/A
Urban Local Street (residential, less than 1 du/acre)	Sidewalks on both sides preferred. Minimum of 5 ft shoulders required.	Secure/preserve ROW for future sidewalks.
Urban Local Street (residential, 1 to 4 du/acre)	Both sides preferred.	Second side required if density becomes greater than 4 du/acre or if schools, bus stops, etc. are added.
Local Street (residential, more than 4 du/acre)	Sidewalks on both sides required.	N/A
All Commercial Urban Streets	Sidewalks on both sides required.	N/A
All Streets in Industrial Areas	Sidewalks on both sides preferred. Minimum of 5 ft shoulders required.	N/A

*“Future Phasing” refers to preparations made for future sidewalks construction

**du or *dwelling unit*, refers to a structure, or part of a structure, used as the residency of one household

CROSSWALKS



MIDBLOCK CROSSWALK



PEDESTRIAN REFUGE (also called *pedestrian island*)



DESCRIPTION	DIMENSIONS	APPLICATION
<p>Crosswalks are part of the pedestrian network as a designated space for pedestrians to cross the street. Crosswalks might be marked, or unmarked. Marked crosswalks may have horizontal markings, traditional “ladder” design, diagonal markings, or art.</p>	<p>6 ft minimum width, but are recommended to be to 8 ft.</p> <p>Vehicle stop bars should be set back at least 8 ft from the crosswalk.</p>	<p>According to Tennessee code, all intersections are considered crosswalks, and designate pedestrian right-of-way regardless of being marked. It is recommended that crosswalks should be marked whenever possible.</p>

DESCRIPTION	DIMENSIONS	APPLICATION
<p>Facilitates pedestrian crossings not at an intersection, by incorporating a marked pedestrian crosswalk.</p>	<p>6 ft minimum width, but are recommended to be to 8 ft.</p> <p>Vehicle stop bars should be set back at least 8 ft from the crosswalk.</p> <p>Raised pedestrian refuges should be incorporated at midblock crossings when available.</p>	<p>Most effective at midblock locations with heavy pedestrian activity and/or long blocks. Should not be less than 200 ft from an intersection. Most appropriate for roads with low daily traffic volume (<4000 AADT) and speeds ≤35mph.</p>

DESCRIPTION	DIMENSIONS	APPLICATION
<p>Raised section of pavement (or similar material) located in the middle of the roadway at a midblock cross where pedestrians can stop while crossing the road. Pedestrian refuges limit pedestrian exposure at the crossing.</p>	<p>6ft minimum width, with 8 ft to 10 ft preferred. For widths >17 ft, ramps are preferred.</p> <p>Lengths vary, but recommended ≥40 ft</p>	<p>Most appropriate at midblock crossing spanning two-way roadways with two or more travel lanes in each direction.</p>

PLANNING
FEATURES

TRAILS

Trails include paved and unpaved paths intended for recreational use by those choosing to walk, run, bike, ride motorized vehicles, ride horses, or other similar activities. The best and most successful trails integrate multiple uses into their design. The intended use of the trail is called “managed use” and refers to what type(s) of uses the trail is maintained to facilitate. Trail design can be complicated as there are few uniform guidelines. Generally, trail construction balances considerations such as ridge lines, slopes, bluffs & cliffs, streams, and points of interest.

Ownership: Most trails are publicly owned, although it is not uncommon to see portions or even entire networks of privately owned and managed trails.

Policy: Policies guiding trail siting and design typically originate at the state or local levels. National policies generally address accessibility such as ADA requirements.

Funding: Trail funding typically comes from public sources. In the face of fewer publicly available dollars, private sources are increasingly being used to support trail construction and management, particularly for private development located along trails.



TRAIL CLASSES



Trail class 1



Trail class 2



Trail class 3



Trail class 4



Trail class 5

CLASS TYPE	DESCRIPTION
Class 1	Minimally developed with intermittent tread and indistinct, natural obstacles common.
Class 2	Moderately developed, tread continuous and discernable but narrow, natural obstacles common.
Class 3	Developed, tread continuous and obvious, some natural obstacles.
Class 4	Highly developed, tread wide and smooth, obstacles infrequent.
Class 5	Fully developed, tread wide and often paved, no obstacles.

COMMON USER TYPES

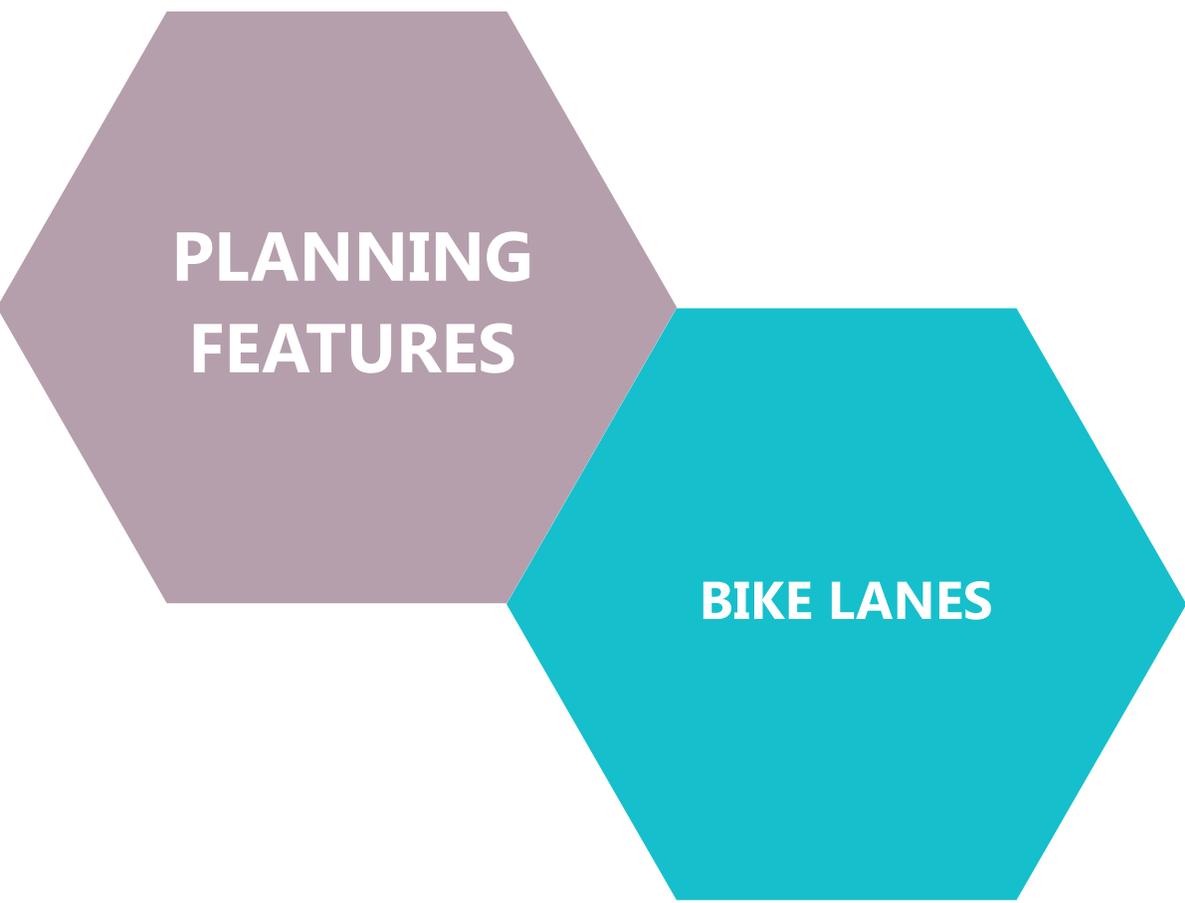
“MANAGED USE”	DESCRIPTION
Footpath	Trail used primarily or solely for recreational foot traffic
Bikeways	Trail used primarily or solely for bicyclists
Equestrian	Trail used primarily or solely for horse riding
Rail to Trail	Converted trail that retrofits unused or abandoned rail lines, via an easement, into trails for hiking and biking.
Water Trail/Blueway	Trail found via lakes, streams, and waterways for non-motorized equipment (kayak, canoes, and rafts)
Motorized	Trail designated for motorized use (dirt bikes, ATVs etc.)

TRAIL APPLICATION

“MANAGED USE” (most common)	CLASS TYPE				
	CLASS 1	CLASS 2	CLASS 3	CLASS 4	CLASS 5
Footpath	Yes	Yes	Yes	Yes	Yes
Bikeways	Not Advised	Yes	Yes	Yes	Yes
Equestrian	Yes	Yes	Yes	Yes	Not Advised
Rail to Trail	Not Advised	Yes	Yes	Yes	Yes
Water Trail/ Blueway	Guidelines not developed				
Motorized	Not Advised	Yes	Yes	Yes	Not Advised

TRAIL TYPES

TRAIL TYPE	DESCRIPTION
Destination Trail	Often part of larger trail or park network, drawing users due to location and presence of natural features. Integrates park-like features with multi-use trails, providing uninterrupted pedestrian access to and through natural areas. Trails are typically separated by use to provide user safety.
Linking Trail	Provide connective infrastructure to and from surrounding destinations, but generally not through heavily natural areas. Linking trails are often located within public right of ways, and serve both a recreational and connective purpose.
Nature Trail	Unlike destination trails, the primary purpose of nature trails is to interact with and experience nature. While still providing recreation space, nature trails are generally less developed, and contain greater difficulties in trail experience.



PLANNING
FEATURES

BIKE LANES

Bike lanes provide designated spaces for bicycles to travel, connecting destinations within a city, town, or even a region. Bike lanes are most often located adjacent vehicle travel lanes within an existing roadway. Communities are increasingly creating bike lanes separated from roadways in efforts to promote safety and use.

Ownership: Bike lanes are almost always publicly owned and managed.

Policy: Bike lane policies are governed by national, state, and local guidance, in that order. Bike lanes must adhere to accessibility requirements set at the federal level.

Funding: Funding for bike lanes is generally part of a local community's capital improvements budget. State and federal funds are becoming increasingly common.



BIKE BOULEVARD/SHARROW



CONVENTIONAL BIKE LANE



DESCRIPTION	DIMENSIONS	APPLICATION
<p>Streets with generally low traffic volumes and speeds, and designed to give bicycles travel priority within the travel lane. Bike boulevards generally use signage, pavement markings, and traffic calming measures to discourage through-trips by motor vehicles, thereby creating safe and convenient bicycle routes.</p>	<p>N/A</p>	<p>A street segment, or series of contiguous segments, with low vehicle counts and speeds, typically within a medium to dense residential area. Ideally, bike boulevards connect users with the larger bike network. While still used in many communities, many bike planning professionals are moving away from bike boulevards as viable design solutions to promote bicyclists' safety.</p>

DESCRIPTION	DIMENSIONS	APPLICATION
<p>A portion of roadway marked for primary (or exclusive) use by bicyclists. Conventional bike lanes are intended for one-way travel, most often in the same direction as adjacent traffic.</p> <p>Conventional bike lanes generally have no physical barrier other than a simple painted stripe, which distinguishes them from cycle tracks. As a result, vehicles are physically able to cross or enter into the bike lane.</p>	<p>Recommended lane minimum of 5 ft from curb to lane stripe. Stripe standard of 4 in.</p>	<p>Bike lanes are located between the travel lane and on-street parking. If there is no on-street parking then a bike lane is placed between the travel lane and curb.</p> <p>A core piece of most bike networks, bike lanes are located in medium to low traffic roadways. Bike lanes can be used to connect community destinations, and are most effective when connecting commercial and residential areas.</p> <p>Bike lanes may be distinguished using green paint, lane markings, signage, and/or intersection treatments.</p>

BUFFERED BIKE LANE



CYCLE TRACK
(also called protected bike lane)



DESCRIPTION	DIMENSIONS	APPLICATION
<p>Combines a conventional bike lane with a painted buffer to provide greater separation between the bike lane and vehicle lane. Like conventional bike lanes, buffered bike lanes have no physical barrier other than the painted striping.</p>	<p>Recommended lane width of 5 ft from curb to inner stripe. Buffer minimum width of 1.5 ft when adjacent standard travel lane, 3 ft width when adjacent parking lane.</p>	<p>Buffered bike lanes are located between the travel lane and on-street parking. If there is no on-street parking then a buffered bike lane is placed between the travel lane and curb.</p> <p>A core piece of most bike networks, bike lanes are located in medium to low traffic roadways. Bike lanes can be used to connect community destinations, and are most effective when connecting commercial and residential areas.</p> <p>Buffered bike lanes may be distinguished using green paint, lane markings, signage, and/or intersection treatments.</p>

DESCRIPTION	DIMENSIONS	APPLICATION
<p>Exclusive bike infrastructure, combining a conventional bike lane with vertical protective elements. Cycle tracks are physically separated from vehicle traffic, distinct from pedestrian sidewalk, and may be designated for one or two-way bike traffic. Two-way cycle tracks should have a painted centerline to separate bicycle traffic.</p> <p>Unlike conventional or buffered bike lanes, cycle tracks do not allow vehicles to enter or cross. As a result, cycle tracks are located along the street edge even if adjacent on-street parking exists.</p>	<p><i>One-way</i> – Recommended minimum lane width of 5 ft from curb to lane stripe or protective feature. 7 ft width preferred.</p> <p><i>Two-way</i> – Recommended minimum lane width of 12 ft from curb to lane stripe or protective feature. Recommended protective feature ‘zone’ width between 1.5 ft and 3 ft. Recommended vertical protection height between 4 in and 3 ft. Recommended protective element spacing every 10 ft to 40 ft (depending on adjacent vehicle traffic and speeds).</p>	<p>A core piece of most bike networks, cycle tracks are located in medium to high traffic roadways. These lanes can be used to connect community destinations, but are most effective when connecting commercial and residential areas.</p> <p>Two-way cycle tracks are not recommended for two-way streets due to increased conflict areas and user unpredictability, particularly at intersections. Two-way cycle tracks are generally placed on one-way streets, and/or when most destinations are located on one side of the street.</p>

SEPARATED BIKE LANE



DESCRIPTION	DIMENSIONS	APPLICATION
<p>Bike lanes that are physically separated from the vehicle travel lanes or parking zones via permanent infrastructure such as concrete curbs, raised lanes, or landscaping.</p>	<p>Recommended lane width of 5 ft from curb to lane stripe. Separation infrastructure width of 3 ft, but not less than 16 in. Typical vertical height no less than 4 in.</p>	<p>Separated bike lanes are either located between a parking zone and curb, or off the street all together.</p> <p>Separated bike lanes are typically located in either high traffic roadways, or along rural roadways with abundant right of way. These lanes can be used to connect community destinations, but are most effective within urban commercial districts</p>

**some definitions use cycle track, protected bike lanes, and separated bike lane interchangeably. For this publication, separated bike lanes are distinguished by permanent infrastructure with some vertical height, placed between the travel/parking lane and the bike lane.*

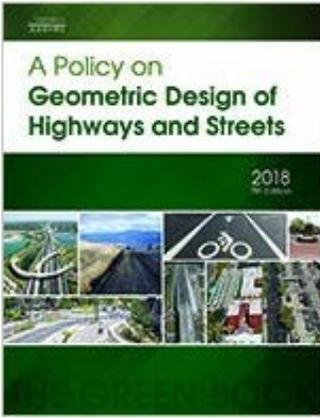


ADDITIONAL RESOURCES

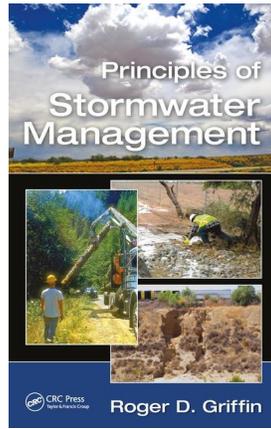


There are many guiding community design feature documents from federal, state, and local agencies and professional associations. Following is list of resources on classification and appropriate integration of community design components.

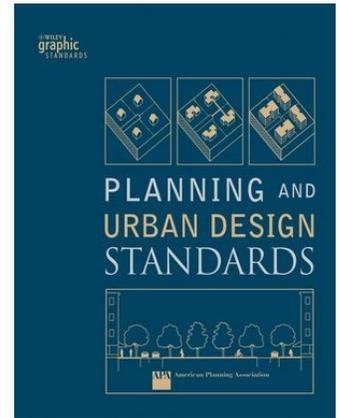
The Tennessee Department of Health's Office of Primary Prevention has also created a suite of built environment and health resources. These resources can be found at: <https://www.tn.gov/health/health-program-areas/office-of-primary-prevention.html>



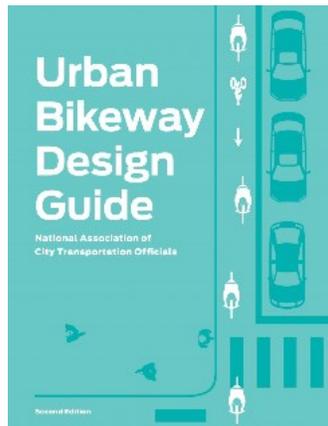
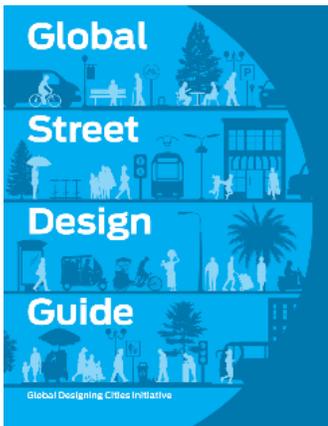
AASTHO Geometric Design of Highways and Streets



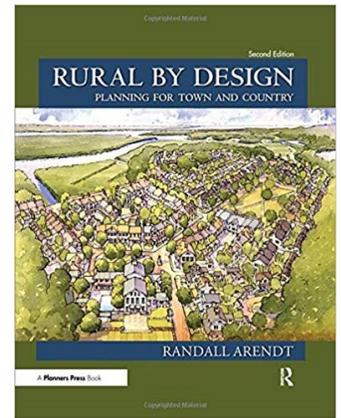
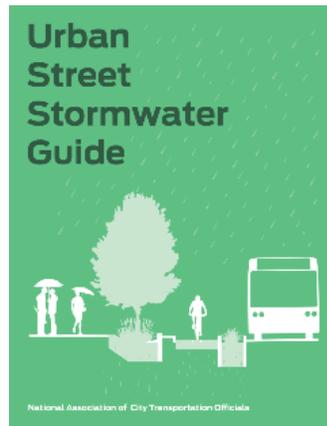
Principles of Stormwater Management



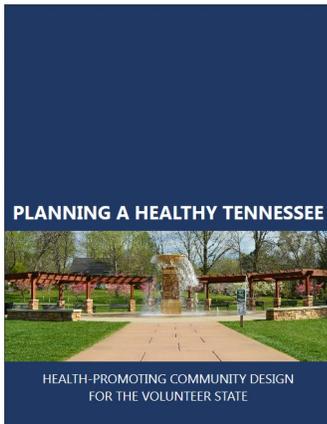
APA Planning and Urban Design Standards



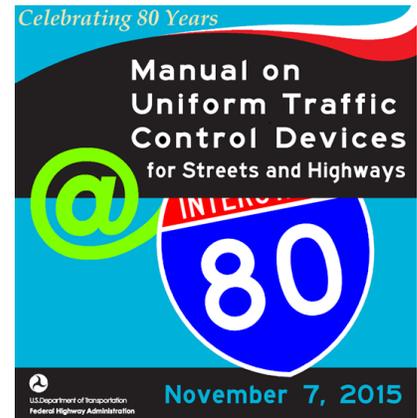
NACTO Design Guidelines



Rural by Design



Tennessee Department of Health



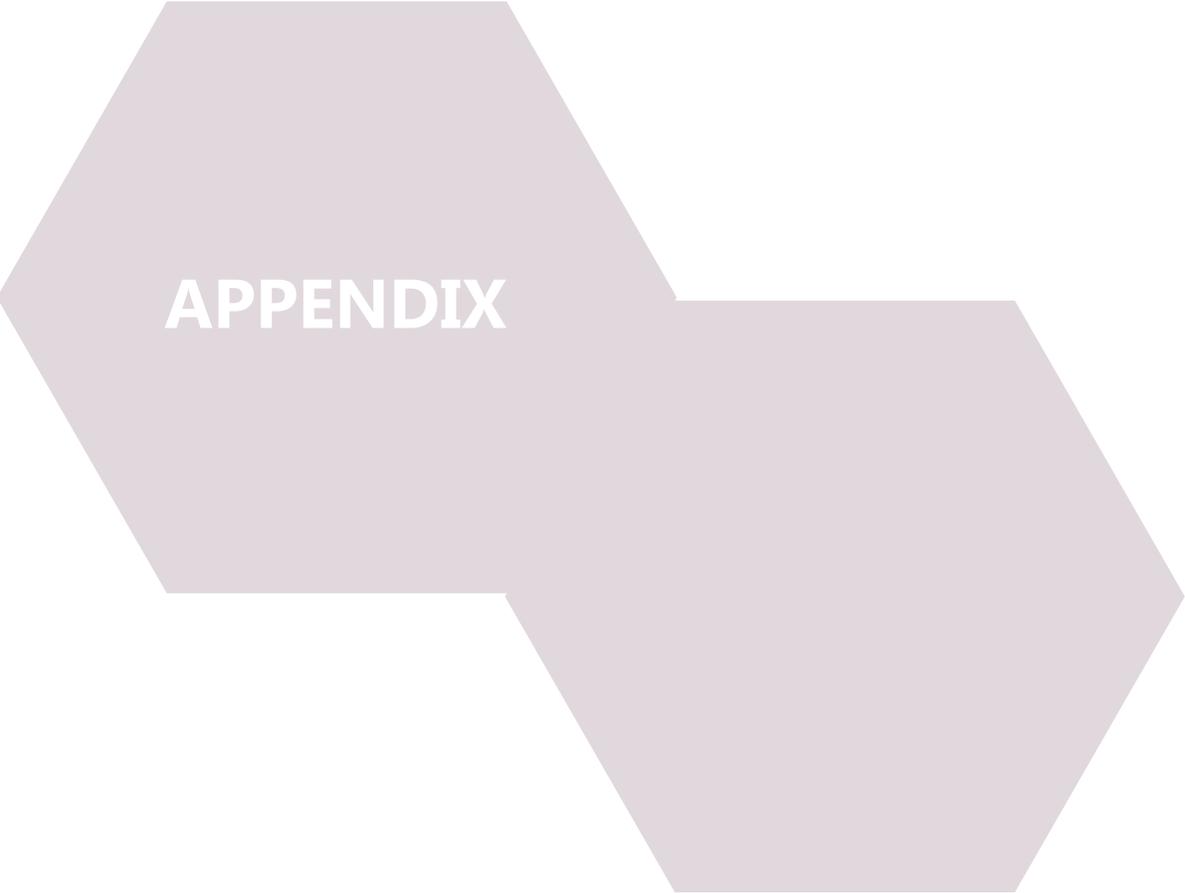
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International Council of Shopping Centers



APA Planning Advisory Service Reports (series)



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US Department of Transportation Federal Highway Administration Course on Bicycle and Pedestrian Transportation https://safety.fhwa.dot.gov/PED_BIKE/univcourse/pdf/swless19.pdf

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