

## Toolkit

Implementation of the Station Area Vision is accomplished through specific physical improvements. The HQTAToolkit provides a collection of individual elements (infrastructure and policy) based on contemporary best practices that can be combined to improve the public realm for people who walk, bicycle, and take public transit.

**A - Complete Streets**

**B - Placemaking**

**C - Building Types & Precedents**



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## Toolkit

### A - COMPLETE STREETS

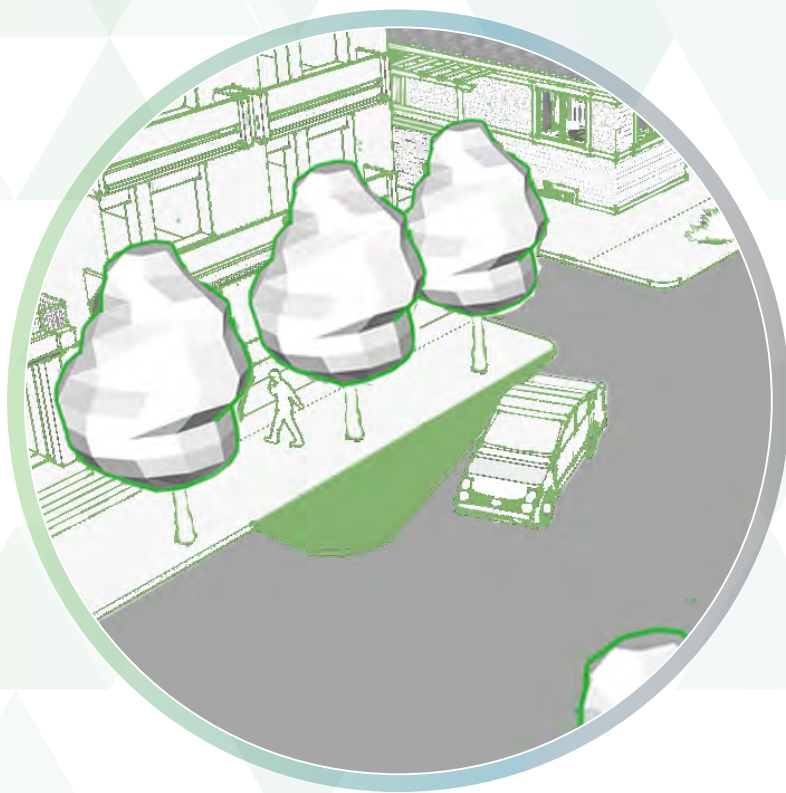
Street Design

Intersections

Infrastructure

Amenities

Other



## Complete Streets

Complete streets are designed and constructed to serve all users of streets regardless of age or ability or whether they are driving, walking, bicycling, or taking transit.<sup>1</sup> In many areas of the SCAG region, vehicular travel lanes have been given priority within the public right-of-way over other forms of transportation leaving little space for sidewalks, bicycle paths, and transit. In HQTAs within the constrained street right-of-way, the challenge is to create a network of complete streets where tree-lined walkways, bicycle paths, pedestrian/ bicycle amenities and transit connections are balanced with the requirements of automobiles. The two diagrams illustrate an example of transforming a major corridor into a more walkable, bicycle friendly, and transit-supportive street.

### Benefits

- Safety – Designing streets that consider safe travel for all modes can reduce occurrences and severity of vehicular collisions with pedestrian and bicycles.
- Health – Promotes a healthy lifestyle by encouraging physical activity.
- Greenhouse Gas Emission reduction – Developing an integrated land use and transportation pattern in a HQTA can reduce VMT and greenhouse gas emissions.
- Economic Development – Multi-modal transportation networks can improve economic activity of local business and attract new economic development.

### Street Design

- Lane Width and Re-purposing
- Transit Lanes
- Bicycle Lanes and Paths
- Sidewalks
- Bus Bulbs
- Speed Table

### Intersections

- Traffic Circle
- Diverter
- Median Refuge Island
- Curb Extension
- Protected Bicycle Intersection
- Enhanced crosswalk
- High-intensity Activated Crosswalk (HAWK) Beacon
- Scramble Crosswalk
- Curb Ramp

### Infrastructure

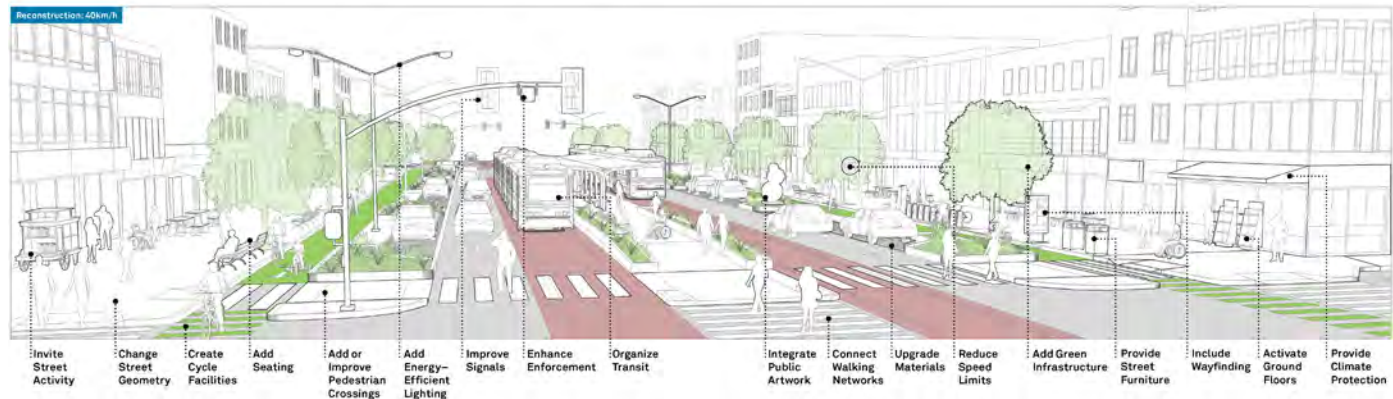
- Chicane
- Street trees
- Treelet
- Greenway Planters / Bioswales
- Permeable Paving
- Lighting

### Amenities

- Wayfinding
- Street Furniture
- Transit Shelter

### Other

- Demonstration Projects



<sup>1</sup>State of California OPR, General Plan Guidelines: Complete Streets and the Circulation Element, 2010.

Source: NACTO

## Complete Streets

### ROUGH ORDER OF MAGNITUDE (ROM) COST ESTIMATES FOR COMPLETE STREET AMENITIES (2019)

The table at right lists an estimated cost range for the complete street elements profiled in the HQT A Toolkit. These estimates can be used as cities develop more detailed complete street plans as priority projects move forward.

Costs for contingencies (design and construction), general contractors, contractor overhead and project, bonds and insurance, and escalation are factors which may increase the cost estimates provided at right. These factors vary by city, and should be added to the estimates on a case-by-case basis.

The Toolkit is a living document meant to be updated over time. These cost estimates should be updated periodically to reflect the average costs for the complete street amenities described herein.

Complete Street Treatments		Lower Limit (\$)	Upper Limit (\$)	Unit
Street Design	<b>Street Reconstruction to achieve transit lanes or protected bike lanes, new curbs, wider sidewalks, new street/pedestrian lighting, street trees, street furniture, storm water management</b>	\$15,000,000	\$28,000,000	/ mile
	<b>Transit Lanes (re-stripping only, no new curb, no color)</b>	\$25	\$30	LF
	<b>Bicycle Lanes (re-stripping only, no new curb)</b>	\$25	\$30	LF
	<b>Sidewalks (new paving)</b>	\$25	\$80	SF
	<b>Bus Bulbs (at intersection)</b>	\$25,000	\$32,000	each
	<b>Speed Table</b>	\$50,000	\$100,000	each
Intersections	<b>Raised Crosswalk</b>	\$8,000	\$15,000	each
	<b>Traffic Circle</b>	\$50,000	\$100,000	each
	<b>Diverter</b>	\$25,000	\$50,000	each
	<b>Median Refuge Island</b>	\$15,000	\$30,000	each
	<b>Curb Extension (each corner)</b>	\$12,000	\$16,000	each
	<b>Curb Extension: Mid-block</b>	\$7,000	\$12,000	each
	<b>Protected Bicycle Intersection</b>	\$75,000	\$150,000	each
	<b>Enhanced Crosswalk</b>	\$2,500	\$5,000	each
	<b>High-intensity Activated Crosswalk (HAWK) Beacon</b>	\$50,000	\$150,000	each
	<b>Scramble Crosswalk</b>	\$15	\$20	SF
	<b>Curb Ramp</b>	\$3,000	\$5,300	each
Infrastructure	<b>Chicane</b>	\$10,000	\$25,000	each
	<b>Street Trees: General</b>	\$1,500	\$2,500	each
	<b>Street Trees: Palms</b>	\$4,000	\$5,000	each
	<b>Treelet</b>	\$3,000	\$10,000	each
	<b>Greenway Planter / Bioswale</b>	\$50	\$60	SF
	<b>Permeable Paving</b>	\$25	\$50	each
	<b>Lighting: Street (30' tall)</b>	\$30,000	\$50,000	each
	<b>Lighting: Pedestrian (15' tall)</b>	\$5,000	\$6,000	each
	<b>Wayfinding Signage (excludes monument signage)</b>	\$2,000	\$3,000	each
Amenities	<b>Street Furniture: Benches</b>	\$1,200	\$3,200	each
	<b>Street Furniture: Waste Receptacle</b>	\$1,500	\$2,500	each
	<b>Street Furniture: Bicycle Racks</b>	\$600	\$1,800	each
	<b>Street Furniture: Bicycle Fix-it Station</b>	\$3,500	\$4,000	each
	<b>Transit Shelter (new custom)</b>	\$25,000	\$50,000	each
	<b>Demonstration Projects: Bollards</b>	\$6,000	\$2,500	each
	<b>Demonstration Projects: Planters</b>	\$3,000	\$4,000	each

# Complete Streets

## LANE WIDTH AND REPURPOSING

- Amenities
- Infrastructure
- Intersections
- Street Design**

In HQTAs reducing the width of vehicular travel lanes will allow more space to be devoted to other mobility modes including pedestrian. In addition, narrowing lane widths act as traffic calming by reducing vehicular speeds which can decrease pedestrian-auto collisions. Repurposing a vehicular travel lane to a bus only lane can increase the number of people being moved along the street in less space. The example shown illustrates a street with four vehicle lanes of 12' to 13' width repurposed for two vehicular travel lanes, a bus only lane, a parking lane, and a one way buffered bike lane. There are many ways streets can be reconfigured to accommodate multiple transportation modes. The key is to determine for each street which modes are to be given priority if there is not space for all. Many cities define in their plans which streets should have transit priority, pedestrian priority, vehicle enhanced or be bike enhanced streets and apply these categories to address constrained right-of-way conditions.

### Best Design Practices / Guidelines

- A** In constrained conditions, vehicular roadway lane widths may be reduced to 10', parking lanes to 7' to 8', exclusive bus lanes to 12' to 13', one way bike lanes from 5' to 7', and two way bike lanes to 12' including shoulders.



Source: NACTO



SbX with its bus-only lanes in downtown San Bernardino, CA

## Complete Streets

### TRANSIT LANES

- Amenities
- Infrastructure
- Intersections
- Street Design

Transit on a complete street may include 1) a bus that shares a vehicular lane, 2) a peak-hour bus lane that prohibits curbside parking in peak hours, 3) a bus only lane, (either curb side or in the median), 4) a street car, or 5) a rail line. Peak hour bus lanes or exclusive bus only lanes shown in the illustrations increase the efficiency of transit especially on congested streets. On exclusive bus only lanes high ridership buses with transit signal priority at intersections move more quickly than adjoining traffic. Mixed traffic is only allowed to enter or cross a bus only lanes to turn at an intersection or park at designated parking areas. Bus only lanes may be used by emergency vehicles.

### Best Design Practices

- A** Exclusive (dedicated) bus lanes width varies from 12' to 13' depending on transit agency requirements and street constraints.
- B** Exclusive bus lanes require physical barriers to separate bus lanes from mixed flow traffic which could be concrete barriers, bollards, delineators, or other devices.
- C** Well designed and branded transit shelters with ample space for waiting, protection from the sun, rain and wind, adequate lighting, variable message signs, seating, trash, receptacles will contribute positively to the passenger experience and the streetscape environment.



Source: NACTO



Georgia Avenue, Washington D.C.



34th Street, New York

## Complete Streets

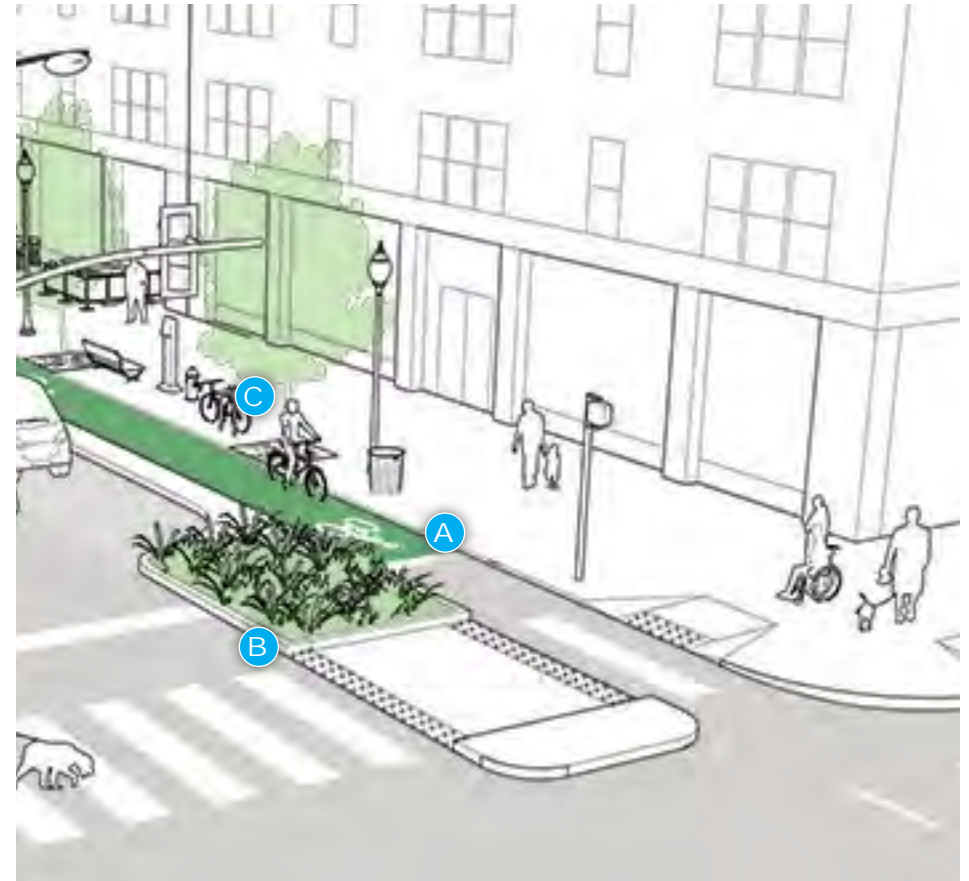
### BICYCLE LANES AND PATHS

- Amenities
- Infrastructure
- Intersections
- Street Design

Providing a robust bicycle network within 3 miles of a HQTAs transit station/stop will assist in the first last mile connections to the transit station/stops and provide an alternative to the automobile for those living, working and playing within the HQTAs area. Options to consider in providing safe, dedicated bicycle lanes/path in the HQTAs include: 1) bicycle lanes (class II) are striped lanes located adjacent to the curb or to parked cars. 2) a bicycle path (class III) is a two way path usually on one side of a street or in a separate right-of-way 3) protected bike lanes or cycle tracks(class IV) contain a buffer or physical separation between the bike lane and parked cars or vehicular travel lanes as shown in the illustration.

### Best Design Practices / Guidelines

- A** Bike lanes are a minimum of 5' width; 7' width desirable.
- B** Protected bike lane – Buffers could be wide striping in the pavement, a raised concrete curb or median, bollards or landscaping. The buffer should be a minimum of 3' if adjacent to parked cars and will need to be broken at driveways and at intersections.
- C** Along the bike lane/bike path there needs to be adequate bicycle parking which could include bike racks, bicycle lockers, bike corrals, bike bulbs and shared bike stations.



Source: NACTO



Class IV bike path, the Bowery, New York



Class IV bike path, Rosemead Blvd, Temple City, CA



## Complete Streets

### SIDEWALKS

- Amenities
- Infrastructure
- Intersections
- Street Design

A continuous, attractive landscaped pedestrian network provided in a HQTAs area will connect a dynamic mix of uses with transit facilities. Adequate sidewalk width and pedestrian amenities will help create a walkable environment throughout the entire HQTAs area. In addition to having travel lanes, devices such as “bump outs” or curb extensions are methods to provide more sidewalk width in constrained right-of-way conditions. These curb extensions may be used for bus stops, additional landscaping, outdoor dining and other amenities.

### Best Design Practices / Guidelines

- A** Sidewalks typically can be classified into the following three zones. 1) an amenity zone next to the curb, 2) a pedestrian zone for access and, 3) a frontage zone. The amenity zone, sometimes called the parkway typically includes street lights, street trees, landscaping, signage, bike racks, trash receptacles, local bus stops with transit shelters, seating, and utilities. It could contain storm water treatment, parking meters, public art, and outdoor dining. The pedestrian zone includes enough walking area to accommodate the number of people walking abreast depending on the land use and must meet ADA requirements. The frontage zone is adjacent to the property line and its width will vary depending on the adjacent land use. In a retail area it may contain outdoor dining, planter boxes, railings, seating, and other amenities.
- B** Sidewalks and parkways of 12’ to 15’ or more are desirable as they are wide enough for street trees, pedestrian amenities, and allow at least two people to pass another. Sidewalks/parkways should not be less than 10’.
- C** Paving patterns will vary per City requirements for construction and maintenance and could include standard gray concrete, colored concrete, decorative paving, permeable paving, and others.
- D** To create a lively active pedestrian environment, the building entrances should be located with access directly from the sidewalk. The ground level frontage of the building facing the sidewalk should provide visual interest with clear glass windows that support the pedestrian environment.



Culver City, CA



Tokyo, Japan



West Hollywood, CA



Chicago, IL

## Complete Streets

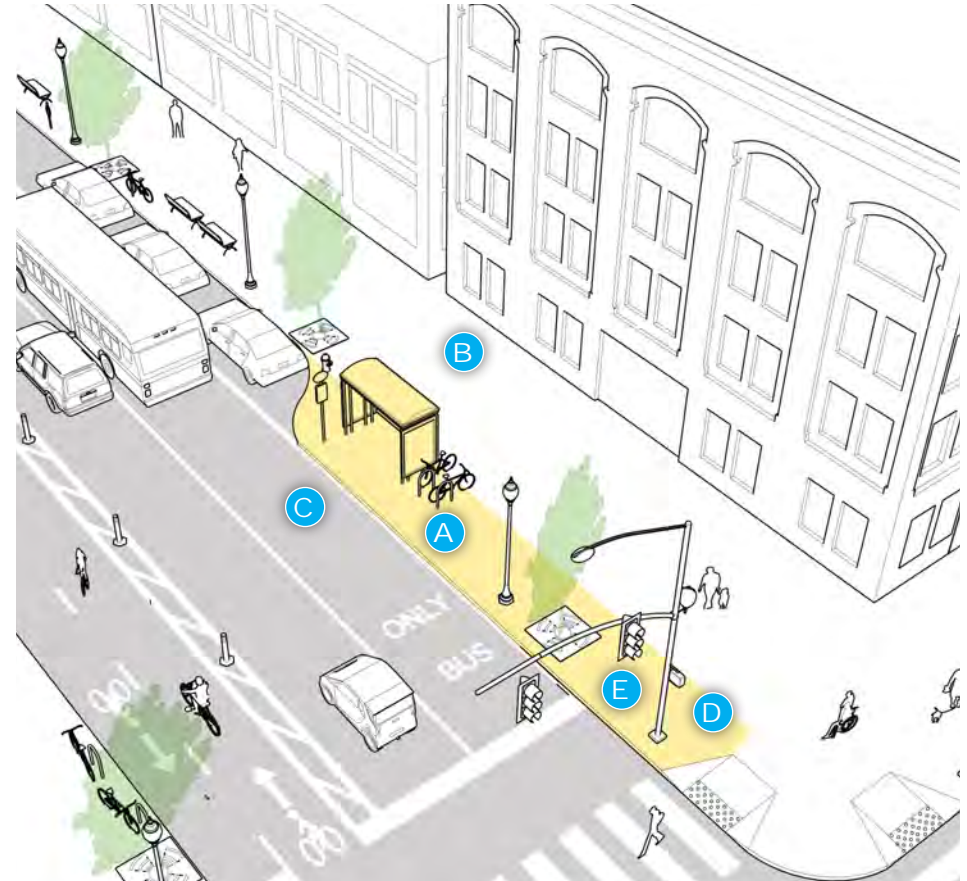
### BUS BULB

- Amenities
- Infrastructure
- Intersections
- Street Design

A bus bulb is a curb extension that allows buses to stop in a vehicular travel lane increasing transit efficiency as the bus stopped at the curb does not need to wait to pull into moving traffic. Bus bulbs create more space adjacent to the sidewalk for pedestrian and transit amenities.

### Best Design Practices / Guidelines

- A** Bus bulbs are typically located on multi-lane arterials with curb side parking allowing for an extension of the sidewalk at intersections and for vehicles to pass stopped buses in adjoining lanes.
- B** Bus bulbs are used in constrained sidewalk conditions where there is limited space for a transit shelter and other amenities.
- C** Bus bulbs may be used in high bus ridership corridors for premium service such as Rapid or Bus Rapid Transit.
- D** Far side bus bulbs are preferred over near side bus bulbs to avoid right turn interference.
- E** The length of bus bulbs vary depending on the type (local or articulated) and the number of buses at a stop. The length of the bus bulb is often constrained by driveways and other physical conditions. For conceptual design guidance a minimum length of 60' to 140' and a width of 8' should be considered and longer if more than one bus will be stopping at the same time.



Source: NACTO



Dexter Avenue, Seattle, WA

## Complete Streets

### SPEED TABLE

Amenities	Infrastructure	Intersections	<b>Street Design</b>
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Speed tables are traffic calming devices that raise the pavement several inches to reduce traffic speed and improve safety for pedestrians and bicycles crossing a roadway.

### Best Design Practices / Guidelines

- A** Speed tables have a flat surface with sloped ramps for vehicles.
- B** To shorten the distance of crossing a street, speed tables are typically located in conjunction with a curb extension and with the flat surface at the level of the curb.



Source: NACTO



Speedway, IN

## Complete Streets

### TRAFFIC CIRCLE

Amenities

Infrastructure

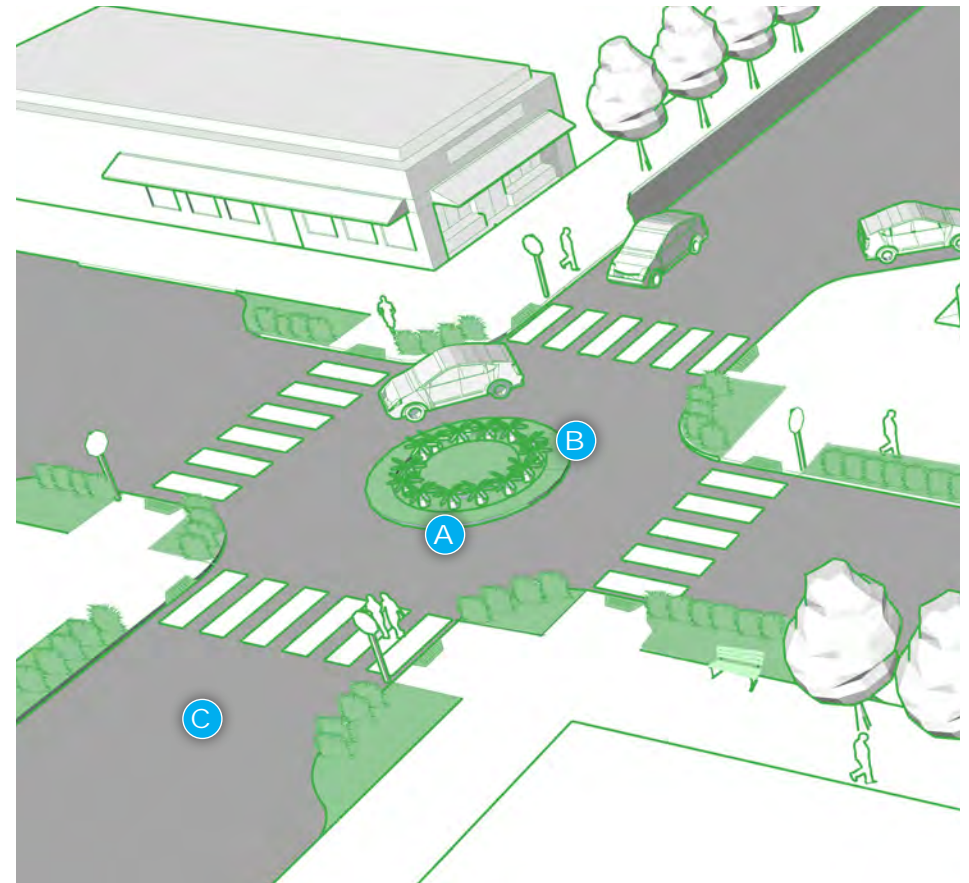
**Intersections**

Street Design

Traffic circles are circular islands in the center of intersections that control the flow of traffic. Drivers that enter the traffic circle must travel in a counter clockwise direction around the island to get to the other side. Intersections with traffic circles can be signalized, stop-controlled, or yield-controlled. Traffic circles slow the flow of vehicular traffic into intersections, which creates a more safe and comfortable environment for bicyclists and pedestrians. Studies have shown traffic circles improve air quality and roadway circulation by eliminating the stop-and-start movements associated with a four-way stop.

### Best Design Practices / Guidelines

- A** Use permeable materials and low water landscaping within the traffic circle for storm water management and create an attractive image.
- B** Use signs and reflective paint on the curb to improve visibility.
- C** Design speeds for vehicular movement, around the traffic circle should be 10 to 15 mph.



Source: Gruen Associates



Vista Bike Boulevard, Long Beach, CA

## Complete Streets

### DIVERTER

Amenities

Infrastructure

Intersections

Street Design

A traffic diverter is a roadway design feature which is placed upon a street or roadway in order to prohibit vehicular traffic from entering into, or from any street. Traffic diverters can be low cost and be large planters, signs, dirt filled concrete drums, curbs, curb extensions and more permanent installations. A raised median diverter allows through traffic for bicycles while directing drivers onto an arterial street more appropriate for car traffic. Diverters also make the crossing much easier and safer for pedestrians. Diverters may include drought-resistant landscaping that can, integrate them into the feel and fabric of the surrounding neighborhood.

### Best Design Practices / Guidelines

- A** Use signs within the diverter and reflective point on the curb to improve diverter visibility.
- B** Use permeable materials and low water landscaping within the diverter for storm water management and aesthetics.
- C** Bicycles can freely pass through the diverter. Enhanced cross walks and a “Z” pedestrian crossing can improve pedestrian safety.



Source: Gruen Associates

## Complete Streets

### MEDIAN REFUGE ISLAND

Amenities

Infrastructure

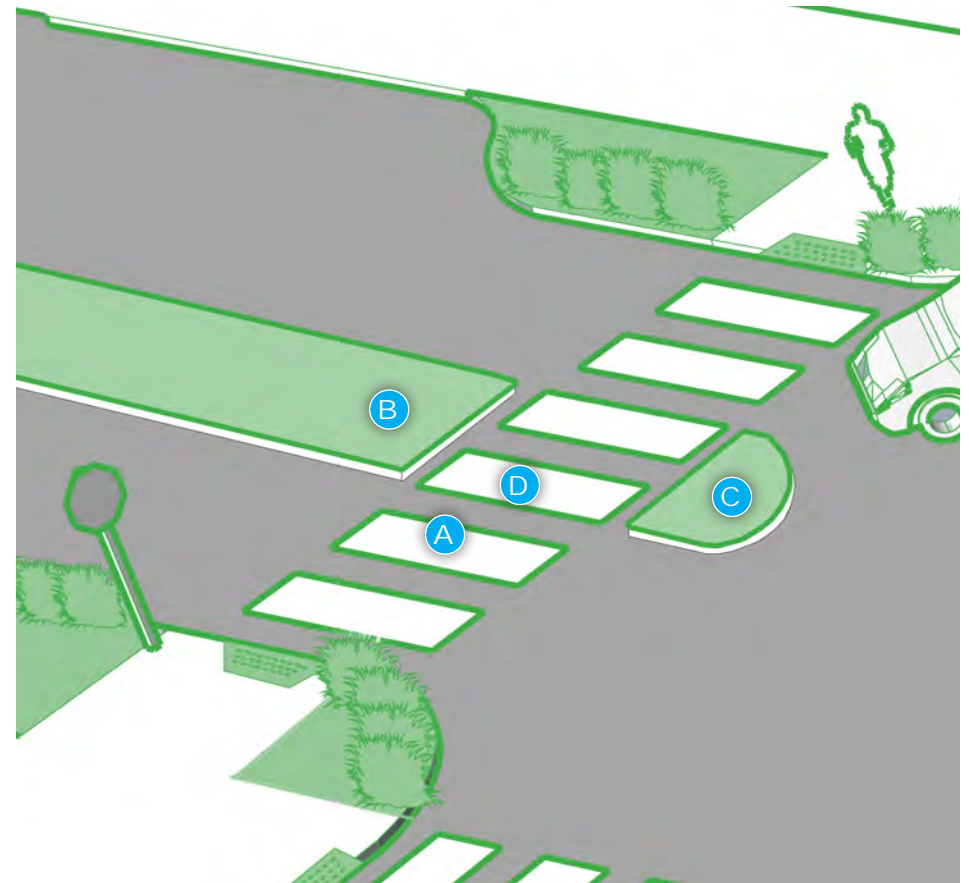
Intersections

Street Design

Median refuge islands can provide a protected space for pedestrians or bicyclists crossing the street. Medians are elevated barricades that divide the roadway down the center. A refuge island can provide additional protection for pedestrians and bicyclists along busy corridors by allowing them to navigate only one direction of traffic at a time. They are especially recommended for wide streets and arterials that pedestrians may have trouble crossing before the end of the signal phase.

### Best Design Practices / Guidelines

- A** Median refuge should accommodate pedestrians with disabilities and provide all pedestrians with a clear path of travel.
- B** The minimum width is 6 feet, a preferred width of 10', and a length of 12' or the length of the crosswalk which ever is wider.
- C** Signage and reflective material should identify the refuge island.
- D** Provide detectable paving for visually impaired users to indicate the line between the travel lanes and the pedestrian refuge.



Source: Gruen Associates



Arlington, VA

## Complete Streets

### CURB EXTENSION

Amenities

Infrastructure

**Intersections**

Street Design

A curb extension is a portion of the sidewalk that is extended into the street or parking lane and typically occurs at intersections. This reduces the distance that pedestrians need to walk to cross the street, makes pedestrians more visible to motor vehicles, and causes drivers to reduce speeds by narrowing the roadway. Curb extensions offer space for amenities such as street furniture, bike racks, public art, transit shelters and landscaping. Curb extensions must be installed with curb ramps that comply with ADA standards. Curb extensions are typically installed at corners but they can be used at mid-block crossings as well.

### Best Design Practices / Guidelines

- A** A curb extension should not obstruct sight lines and allow motorist to clearly see pedestrians and bicyclist. Well designed curb extensions could include low height landscaping, bioswale planting, bike parking, or seating.
- B** To avoid conflict with bike lanes curb extensions often occupy a portion of a curb side parking lane.
- C** A curb extension could modify the storm water flow and the street may need to be redesigned by providing curb breaks into a bioswale, relocating catch basins or an ADA compliant grated channel to divert stormwater to existing catch basins.



Source: Gruen Associates



Long Beach, CA

## Complete Streets

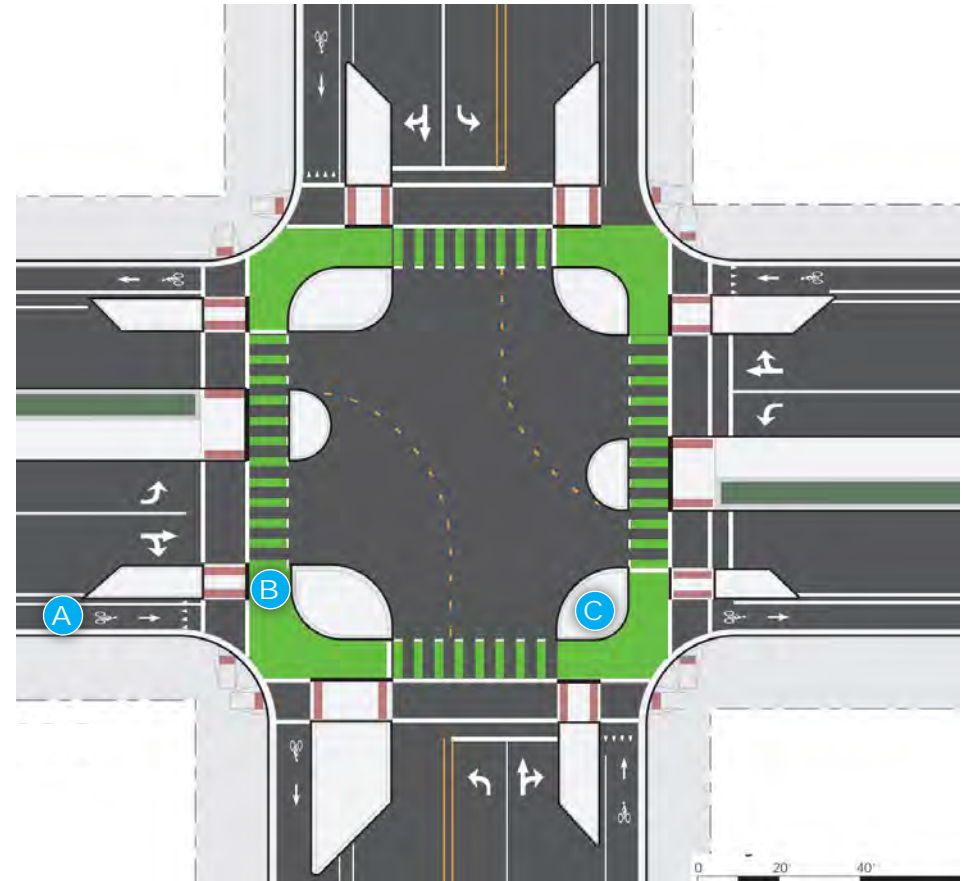
### PROTECTED BICYCLE INTERSECTION

- Amenities
- Infrastructure
- Intersections
- Street Design

A protected bicycle intersection utilizes curb extensions to add a barrier between a bicycle lane and vehicle travel lanes at an intersection. Like other curb extensions, this makes cyclists and pedestrians more visible to motor vehicles. This arrangement provides greater safety for cyclists at intersections by preventing motorists from intersecting with cyclists when making a right turn and providing turning cyclists with an area to queue without interfering with either cyclist or motorists traffic. Protected bicycle intersections offer less space for pedestrian amenities as other forms of curb extensions.

### Best Design Practices / Guidelines

- A** A protected bicycle intersection can be implemented in configurations with shared travel lanes or bicycle-only lanes. Roads with shared traffic lanes will have dedicated bicycle lanes at intersections to accommodate protected intersections.
- B** Well-designed protected bicycle intersections provide sufficient space for at least one cyclist to queue in the protected area. Queuing space can be maximized by widening the inside radius of the corner safety island.
- C** A protected bicycle intersection can include low height landscaping in raised corner safety islands.



Source: ALTA



San Francisco, CA



## Complete Streets

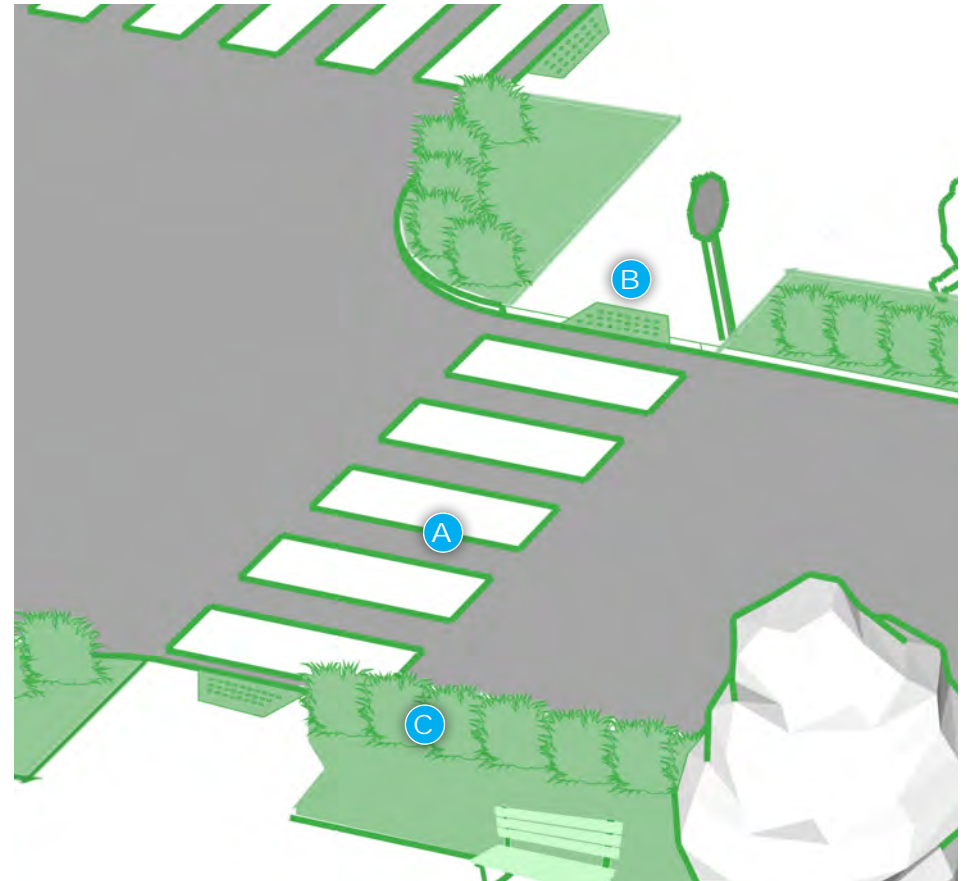
### ENHANCED CROSSWALK

- Amenities
- Infrastructure
- Intersections
- Street Design

Installing crosswalks at controlled and mid-block help pedestrians to identify ideal locations at which to cross a street. Marked crosswalks also indicate to motorists where pedestrians have right-of-way and where to yield. Crosswalks should be highly visible to both drivers and pedestrians and can be installed with basic striping or decorative pavers. Crosswalks can also be supplemented with in-pavement flashing lights, elevated “table crosswalks,” or freestanding beacons to increase visibility, which is particularly important for mid-block crossings.

### Best Design Practices / Guidelines

- A** A continental crosswalk has wide highly visible longitudinal strips paired with a stop line setback from the crosswalk.
- B** Curb ramps shall be designed to align with cross walks.
- C** Vertical elements such as street trees should not block visibility of pedestrians in the crosswalk.



Source: Gruen Associates



Chicago, IL

## Complete Streets

### HIGH-INTENSITY ACTIVATED CROSSWALK (HAWK) BEACON

Amenities

Infrastructure

Intersections

Street Design

HAWK pedestrian signals, beacons, and push buttons promote intersection safety. Pushing the pedestrian button alerts the signal system of the presence of a pedestrian requesting a “walk” signal. In some cases, such as at a mid-block crossing, the pedestrian must press the button to receive a “walk” sign. At signalized intersections, the pushing of the button will reduce the pedestrian’s wait time for crossing the street.

### Best Design Practices / Guidelines

- A Push buttons should incorporate tones for the visually impaired.
- B Push buttons are appropriate for arterial streets, congested streets and in areas with a high concentration of seniors as they can allocate more time for pedestrian crossing.



Source: NACTO



## Complete Streets

### SCRAMBLE CROSSWALK

Amenities

Infrastructure

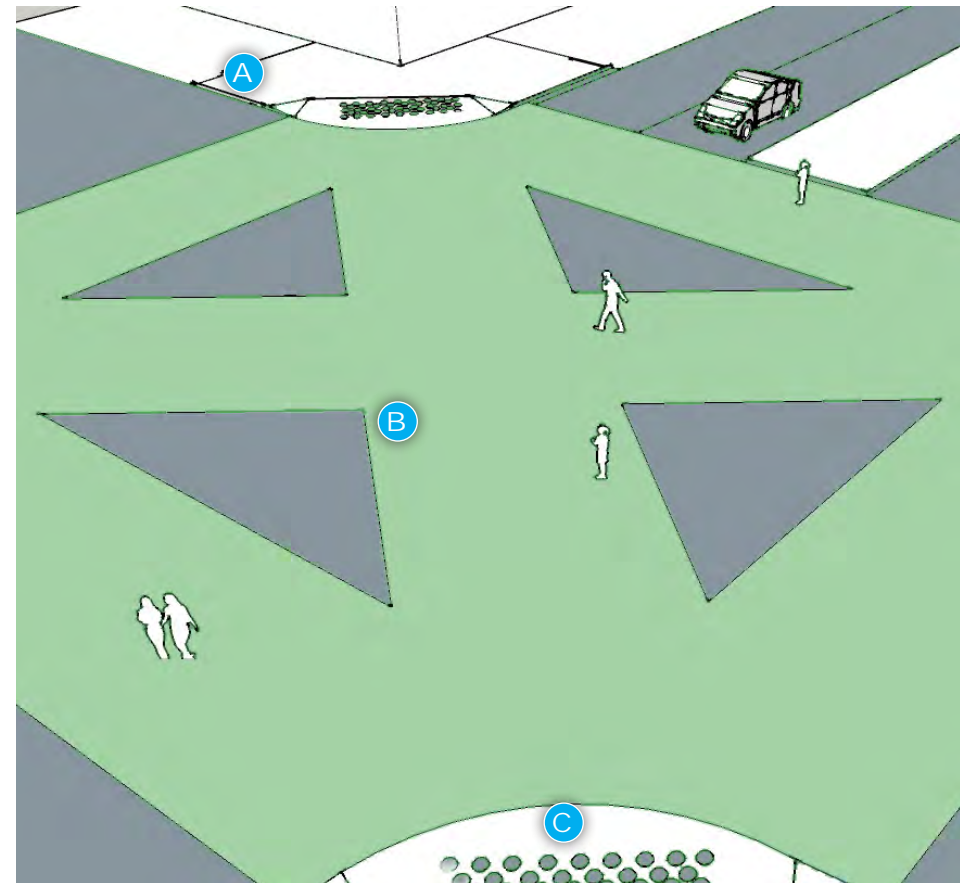
**Intersections**

Street Design

When activated, scramble crosswalks signalization temporarily stops traffic to allow pedestrians to cross at an intersection in any direction. The crossings can be striped with paint or pavers and can be used to direct pedestrian movement. Scramble crosswalks are advantageous in areas with high pedestrian traffic, as they more efficiently allow pedestrians to cross directly to their desired corner even diagonally, as opposed to having to wait for successive crossing signals.

### Best Design Practices / Guidelines

- A** Scramble intersections have “pedestrian only” phase in signal light cycles during which vehicles are prohibited from entering an intersection including right turns.
- B** “Continental” crosswalks or decorative concrete unit pavers may be used at scramble intersections. Continental crosswalks include wide bands perpendicular to the direction of travel.
- C** Curb ramps and tactile warning strips should be provided at curbs to meet ADA requirements.



Source: Gruen Associates



Pasadena, CA

## Complete Streets

### CURB RAMP

Amenities

Infrastructure

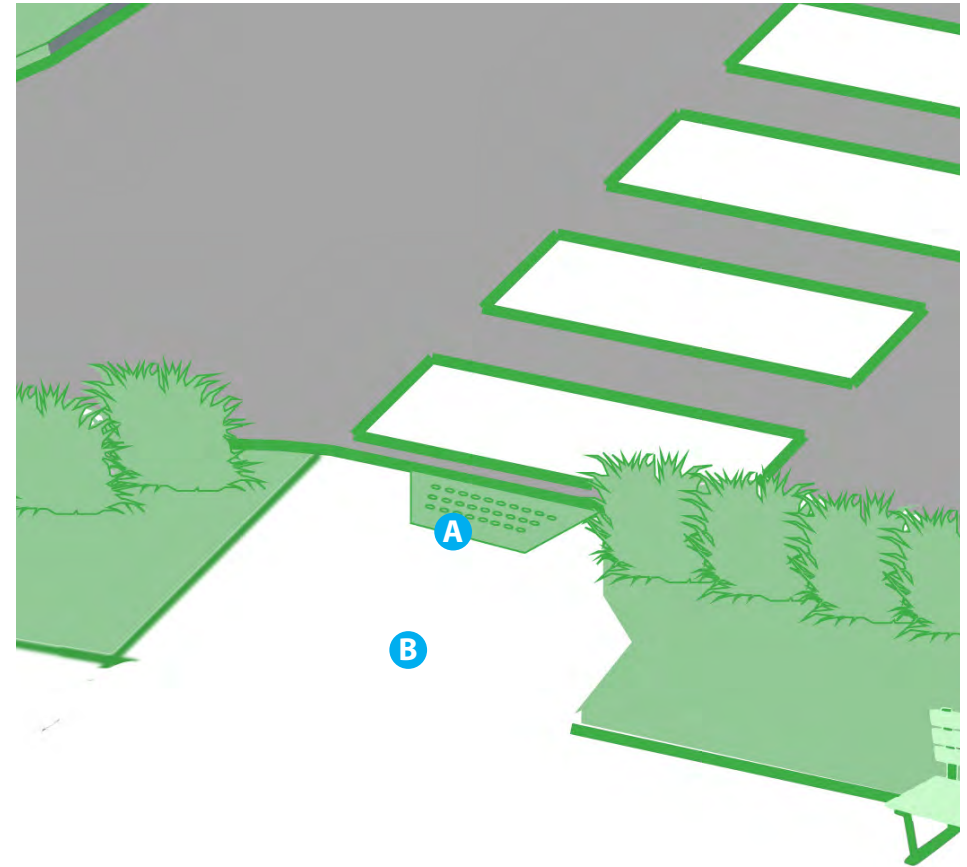
**Intersections**

Street Design

Curb ramps allow persons in wheelchairs, with walkers, with strollers, and with other disabilities convenient access to the sidewalk from the street. The Americans with Disabilities Act (ADA) requires curb ramps to be installed at all locations where pedestrians cross. Curb ramps for each crossing approach are preferred rather than one curb cut per corner so that visually impaired persons have better orientation. Warning strips should be installed on all ramps.

### Best Design Practices / Guidelines

- A** All curb ramps should have ADA - approved ramps with detectable warning surface (min. width 24") in yellow.
- B** At least 48" of landing should be provided behind the curb ramp.



Source: Gruen Associates



Long Beach, CA

## Complete Streets

### CHICANE

Amenities

**Infrastructure**

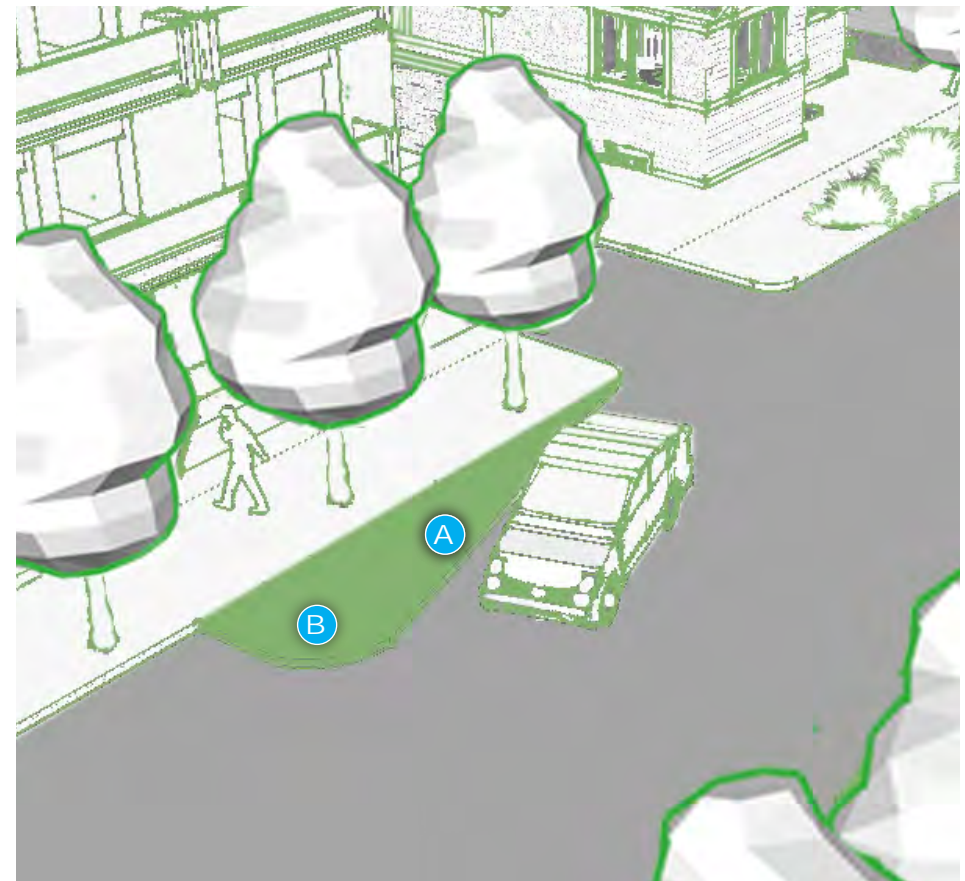
Intersections

Street Design

Chicanes reduce vehicle speeds by visually narrowing the roadway and requiring vehicles to shift their positions horizontally. Chicane and chokers are curb extensions that alternate from one side of the street to the other and calm traffic. If supplemented with landscaping, bike parking, seating and other amenities, chicanes can also create a more pleasant walking environment and a buffer between the sidewalk and the street. The City of Seattle found an 18-35% reduction in travel speeds and a 32-45% decrease in average daily traffic (ADT) volumes at locations with chicanes.

### Best Design Practices / Guidelines

- A** A chicane may require special striping of the street and signage reflective paint on the curb to ensure drivers are aware of the serpentine roadway.
- B** Landscaping and storm water infiltration in the chicane contributes to a pleasant walking environment and can aid in wayfinding for drivers.



Source: Gruen Associates



Austin, TX

## Complete Streets

### STREET TREES

Amenities

**Infrastructure**

Intersections

Street Design

Street trees will enhance the walkability, comfort and attractiveness of the HQTAs pilot area streets. Street trees provide visual interest, unity and shade protection from the hot sun. Landscaping of parkways and tree wells compliment and support street trees and assist in storm water management. Street trees reduce the heat island effect, reduce storm water runoff, improve air quality by absorbing greenhouse gases, and can provide wild life habitat and food.

### Best Design Practices / Guidelines

- A** Street trees and landscaping in the amenity zone should be specified to achieve a strong visual image that fits in the neighborhood, to respond to the area's climate, for low water requirements, for resistance to disease, for compatibility with soil and drainage conditions, and to avoid invasive roots that will uplift sidewalks.
- B** If streets are wide, tall canopy trees should be selected to create a strong visual impact and smaller trees may be selected for local small scaled street.
- C** Typical street trees should be spaced 30' - 35" apart while avoiding interference with street lighting, utilities and visibility of approaches to intersections and driveways.



Culver City, CA



West Hollywood, CA



Bethesda, MD

## Complete Streets

### TREELET

Amenities

**Infrastructure**

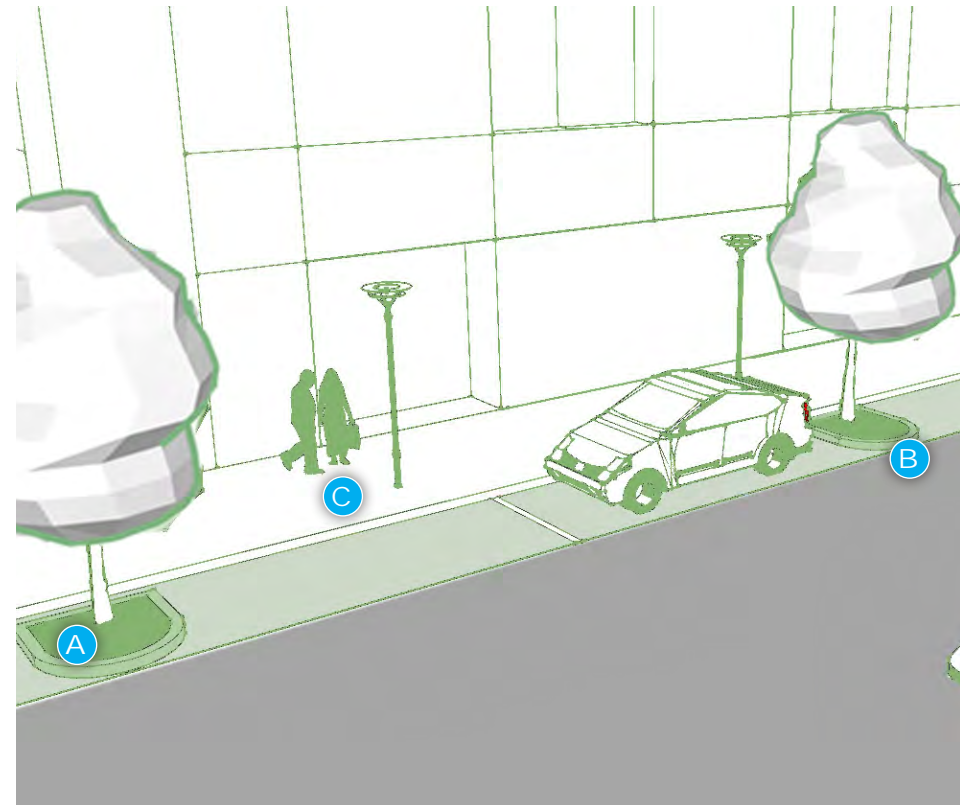
Intersections

Street Design

A treelet is a curbed tree well that is extended into the parking lane between on-street parking spaces. Treelets are typically used as an alternative to planting strips and tree wells in business districts and other areas where the existing sidewalk width is narrow and it is important to maintain the maximum width to accommodate pedestrian volumes and accessibility. Treelets can often be accommodated between existing parking spaces and typically do not impact the number of parking spaces along the street. A tree pit is saw-cut out of the street and a curb extension is built outside the gutter dimensions to prevent conflicts with existing drainage infrastructure.

### Best Design Practices / Guidelines

- A** Treelet island length and widths vary with on-street parking conditions and existing utilities.
- B** Treelets should not obstruct sight lines of drivers viewing pedestrians. Parallel parking lengths should meet city standards.



Source: Gruen Associates



Long Beach, CA

## Complete Streets

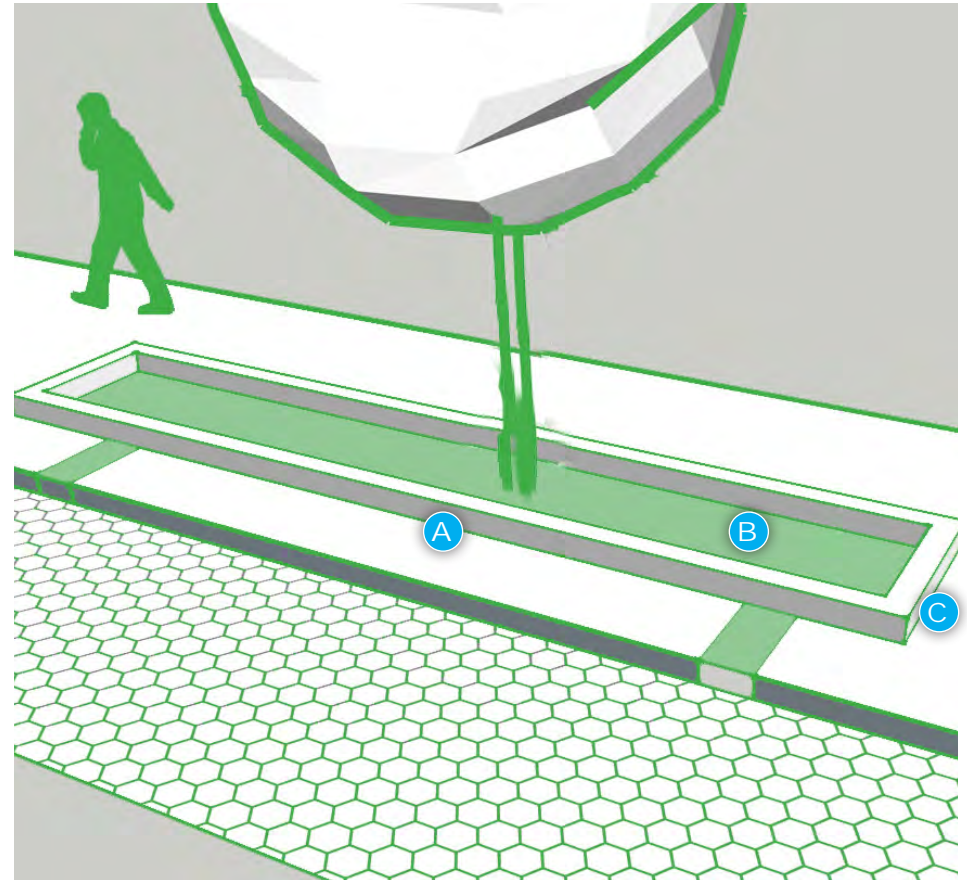
### GREENWAY PLANTER / BIOSWALE

- Amenities
- Infrastructure
- Intersections
- Street Design

Greenway planters/bioswales meet an increasing demand to mitigate storm water pollution from our streets and impermeable surfaces in our urban areas. Bioswale parkways between the street and sidewalk collect and filter stormwater run off from streets. Curb cut-outs direct street runoff into the permeable soils and native plants or grasses to help reduce the flow of water and to filter out pollutants such as sediment, trash, and heavy metals. Drainage pipes installed beneath the soil carry the filtered water to the storm drain system.

### Best Design Practices / Guidelines

- A** Greenway planters or bioswales may be designed in many ways and individual cities are starting to develop standards for green streets that filter storm water. The illustration is one example of a greenway planter where the curb is broken to allow storm water in the gutter to flow into a bioswale planter in the sidewalk area.
- B** If there is not curbside parking, place the greenway planter next to the curb. If there is curbside parking, place an accessible area between the curb and the greenway planter.
- C** Allow for accessible breaks in the greenway planters periodically.



Source: Gruen Associates



Hope Street and 11th Street, Los Angeles, CA



Bioswale, Boston, MA



## Complete Streets

### PERMEABLE PAVING

Amenities

**Infrastructure**

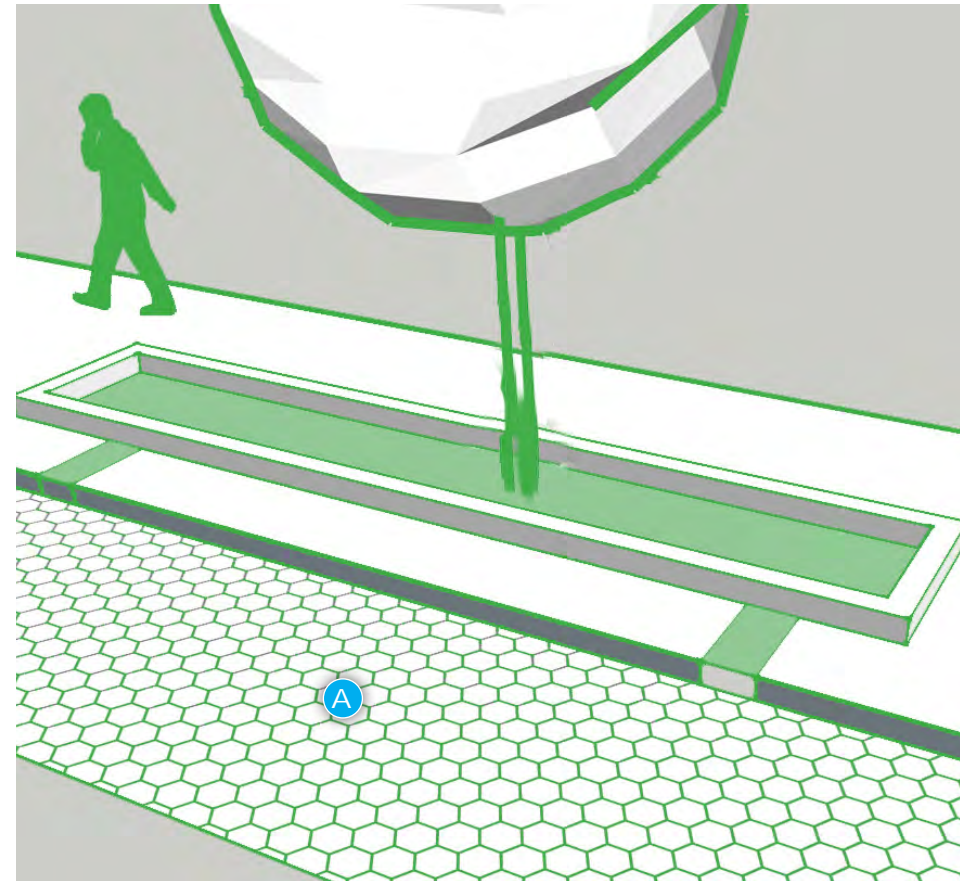
Intersections

Street Design

Permeable pavement allows stormwater runoff to seep through and into the soil below where the water is filtered and eventually directs to the existing aquifer. Permeable pavement is an alternative to typical concrete and asphalt paving and offers a range of utility, strength and sustainable properties. These materials include permeable concrete, asphalt, clay brick interlocking unit pavers, open grid pavers, gravel pavers or decomposed granite. Joints usually include aggregate.

### Best Design Practices / Guidelines

- A** Permeable paving may be used in the street, in parking lots and in sidewalks, especially in the amenity zone. Soil tests are needed to establish soil characteristics and to determine proper aggregate materials so water filters properly through the system. Maintenance is required to keep debris from clogging joints.



Source: Gruen Associates



Source: NACTO

## Complete Streets

### LIGHTING

Amenities

Infrastructure

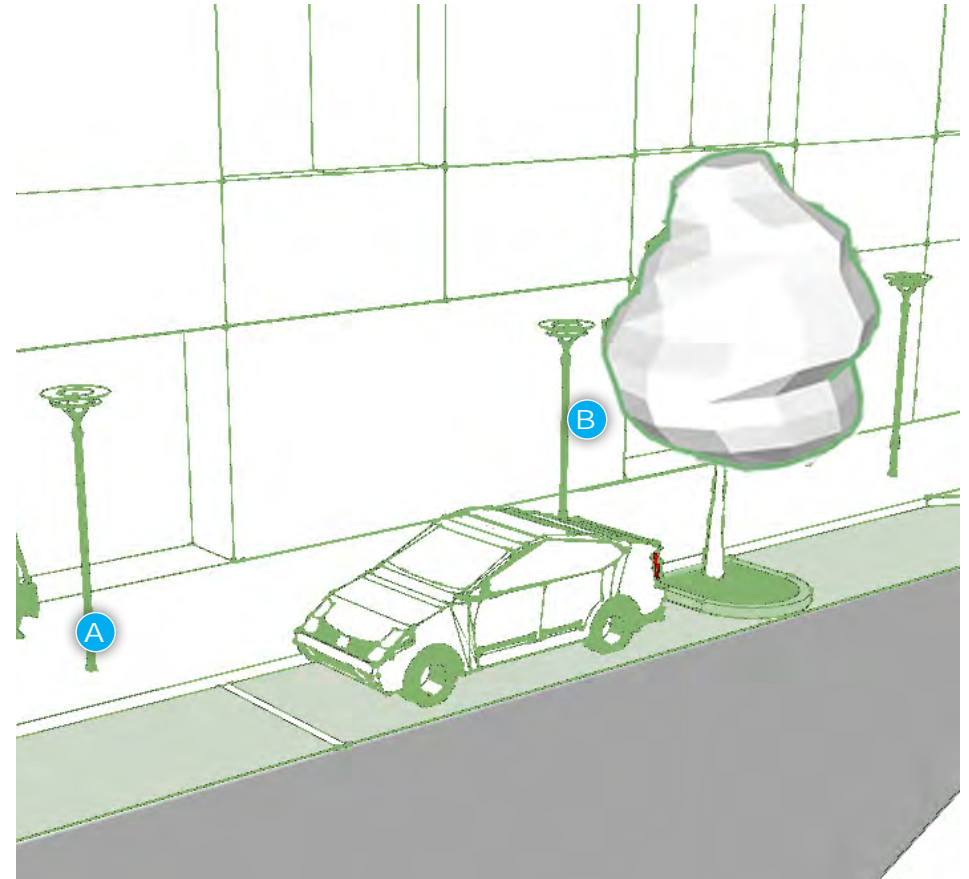
Intersections

Street Design

Street lighting improves streetscapes by improving security and visibility for both bicyclists and pedestrians. Street lights should be installed on both sides of the street and the level of lighting should be consistent throughout the segment. To accompany city standard street lights, which are tall and often spaced over 100' apart, pedestrian scale lighting is shorter in height, more frequent and creates a more aesthetically pleasing, comfortable and safe environment to walk and stroll. Pedestrian-scaled lighting along bike paths and at bus stops also add to the safety and security of those arriving within the HQTAs area. Intersections often require additional lighting to allow motorists to see pedestrians crossing. In addition, when operation and maintenance funds are available specialty lighting of trees and digital signage can add to the vitality of the area.

### Best Design Practices / Guidelines

- A** Lighting should have energy efficient fixtures such as LED which provides even, uniform distribution of light enhancing visibility and safety.
- B** Pedestrian-scaled lighting can be located between street lights, interspersed with street trees in the amenities zone or if sidewalks are wide enough at the back of the sidewalks to maximize the number of street trees.



Source: Gruen Associates



Uptown Transit Hub, Cincinnati, OH

## Complete Streets

### WAYFINDING

**Amenities**

Infrastructure

Intersections

Street Design

Wayfinding improvements can help visitors navigate to major destinations, public facilities, and transit connections. Wayfinding signage can be divided into three categories: **1) Identification signs** that mark important destinations such as buildings, activity centers, and public facilities. **2) Informational signage** that provides more background information on a point of interest and often uses maps. **3) Directional signage** that shows the optimal route between key destinations. A successful wayfinding strategy should make use of all three types of signage. As part of this strategy, cities should develop directional signage for transit stations and informational signage for major destinations.

### Best Design Practices / Guidelines

- A** Graphic designers should develop a comprehensive signage system that is clear and concise for each of the type of signage.
- B** Directional and informative signage should use a consistent color palette, fonts, materials and graphics and be scaled for its purpose.



Source: Gruen Associates



Manufaktura Square, Łódź Poland



Zeughaus Museum, Berlin, Germany

# Complete Streets

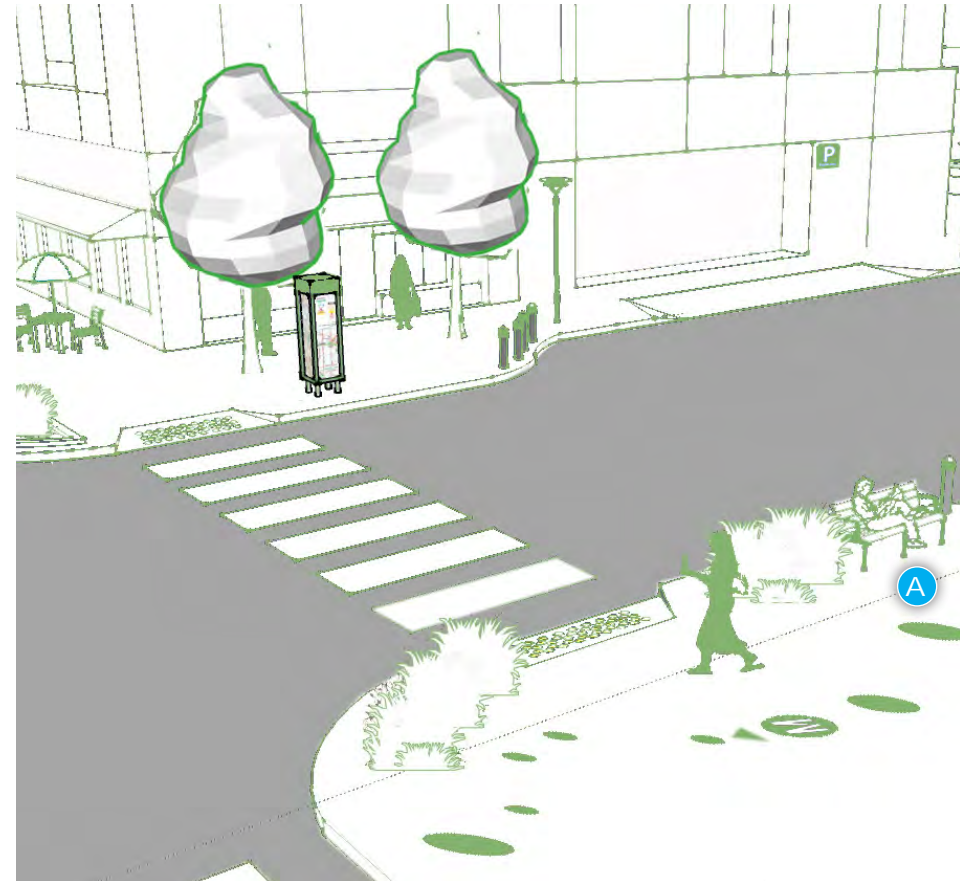
## STREET FURNITURE

- Amenities
- Infrastructure
- Intersections
- Street Design

Street furniture on sidewalks acts as a buffer between pedestrians and vehicular traffic and contributes to an active vital, walkable environment. Benches, water receptacles, and bicycle racks are recommended types of street furniture because they address needs that a pedestrian may have, such as a place to rest. Street furniture should be placed outside of the walking zone as to not create a hazard to pedestrians.

### Best Design Practices / Guidelines

- A** Except at bus shelters and when space allows, benches should face or be perpendicular to the sidewalk creating a seating node. Waste receptacles should be placed near nodes of activity and spaced frequently along the streetscape. Considerations should be given to providing waste receptacles for recycling. Bicycle racks should be located near transit stops, major destinations and bike paths. Outdoor dining on private property and in the frontage zone should be encouraged where adequate space exists.



Source: Gruen Associates



Concrete Bench by Escofet



Caudal Drinking Fountain by Santa & Cole



Grand Park, Los Angeles, CA



Outdoor Litter Bins by Crystal

## Complete Streets

### TRANSIT SHELTER

- Amenities
- Infrastructure
- Intersections
- Street Design

Providing a shelter at all transit stops and stations allows commuters protection from sun and from inclement weather. Shelters should be established outside of the pedestrian walking zone and with sufficient room for bus wheelchair lifts to load and unload passengers. If there is not adequate space to install a dedicated shelter, at a minimum a bench and signage should be provided.

### Best Design Practices

- A** Transit shelters should provide protection from the elements, adequate lighting, seating, a 5'x8' passenger loading area at the front door of the bus, accessibility to the bus and the sidewalk, and information signage.
- B** Benches or seats should be provided at all transit stops and stations for commuters to rest while waiting for the bus or train. Elderly and disabled passengers often have difficulty standing for long periods. Seating should be installed within close proximity of transit stops and stations and under the provided shelter if feasible.
- C** At a minimum, all transit stops and stations should provide signage displaying the route number. Providing timetables and maps are recommended to increase convenience for commuters with transfers and those that are less familiar with the network, such as a bicyclist with a flat tire in an unfamiliar location. For major transit stations and terminals, providing passengers with real time information on arriving transit vehicles is a valuable customer service improvement.



sbX Transit Shelter, San Bernardino, CA



Transit Stop, Temple City, CA



CTA Transit Shelter, Chicago, IL

## Complete Streets

### DEMONSTRATION OR PILOT PROJECT

- Amenities
- Infrastructure
- Intersections
- Street Design

Demonstration projects are temporary, low-cost public realm improvements that serve to introduce new pedestrian safety techniques to the general public. During the pre-design phase for projects, cities and partners should consider installing temporary elements such as curb extensions, plastic bollards, or striping. These improvements typically last no longer than one-two years. These temporary projects can help to demonstrate the benefits of pedestrian and bicycle improvements to the general public, as well as potential funders as the City seeks financial support through public and private grants, and sponsorship opportunities.

### Best Design Practices / Guidelines

- A Flexible Bollards:** Can be used to define pedestrian-only zones, curb extensions, cycle tracks, and other areas where cars are not permitted.
- B Striping:** Used to define areas where curbs will eventually be installed, new lanes of traffic, parking stalls, crosswalks.
- C Planters:** Temporary planters can bring shade and refuge to sidewalks, plazas, and pocket parks. Temporary painting can be used to create colorful plazas and pocket parks.
- D Surface Painting:** They can also be used to delineate important zones such as parking stalls, cycle tracks pedestrian areas, or medians.



Lincoln Hub, Chicago, IL

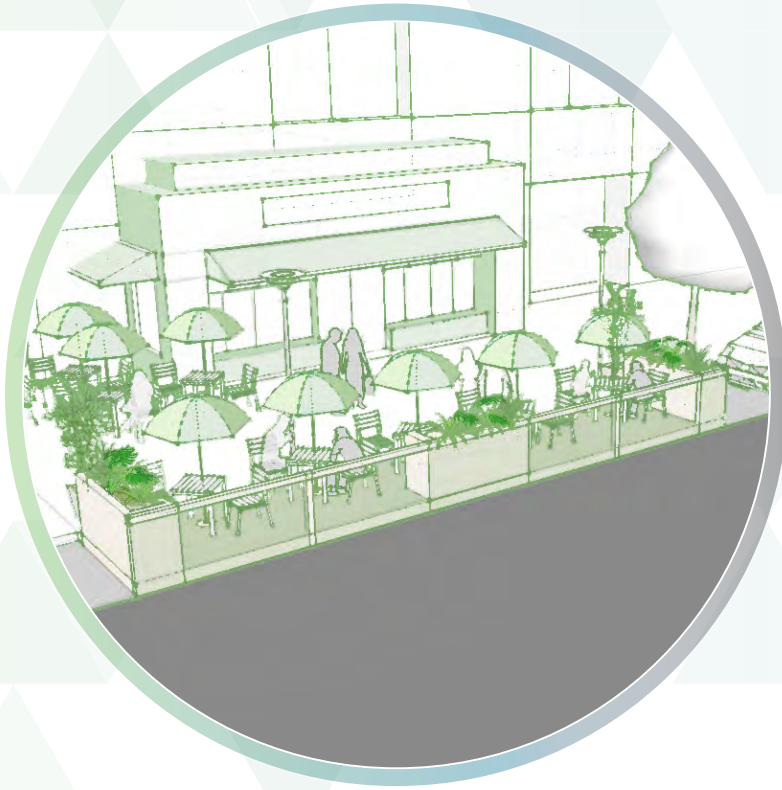


Sunset Triangle Park, Los Angeles, CA

# Part II

## Toolkit

### B - OPEN SPACE / PLACEMAKING



**Parklet**

**Pocket Park**

**Paseo**

**Parkway / Linear Park**

**Reclaimed Street / Pedestrian Mall**

**Neighborhood Park**

**Plazas / Town Square**










## Open Space / Placemaking

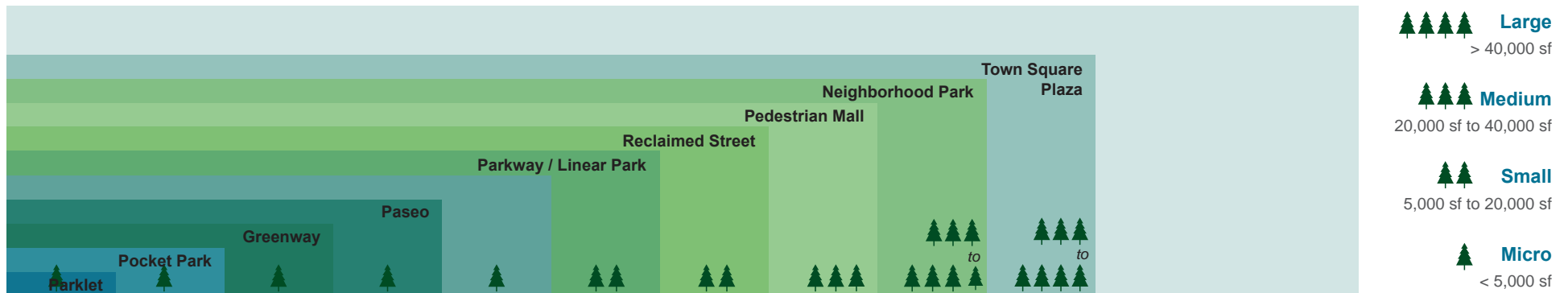
A key ingredient in creating a dynamic, urban TOD environment which is connected by transit and active transportation is to create attractive and functional places that people want to be. Placemaking includes providing public gathering and open spaces which are linked to transit and transit supportive housing, educational, institutional, and commercial uses. These open spaces vary in size and function, some are programmed for events to activate an area, some may be adjacent to a transit station or civic building and others may be entirely for recreation. The illustrations show some of the types of open space appropriate for a HQTA area.



Santana Row, San Jose, CA

Source: ULI

-  **Active Transportation Connection**
-  **Sport and Active Recreation**  
Sport Fields, Swings, Exercise, etc.
-  **Culture, Education, and Passive Recreation**
-  **Stormwater Management / Landscape**  
Bioswale
-  **Habitat and Open Space**  
Habitat Corridor Links, Natural Landscape
-  **Safety and Visibility**  
Eyes on the Street, Convenient Access
-  **Retail and Commercial Features**  
Space for / Proximity to
-  **Event Space**  
Temporary Stage, Amphitheater
-  **Pet Areas**  
Dog Park, Dog Run





## Open Space / Placemaking

### PARKLET

Parklets connect curb side lanes and curb extensions into viable community spaces for recreation, seating and outdoor dining. By connecting one or two parking spaces into gathering spaces, the sidewalk is extended for public use and enhances the neighborhood. San Francisco, Boston, Los Angeles, Long Beach, all have Parklet programs. In Long Beach, the City has a pilot program with local restaurants to create these spaces. On Broadway and Spring Street in downtown Los Angeles, there are many parklets.

### Best Design Practices / Guidelines

- A** Parklets should not encroach into the walking path and should be flush with the sidewalk.
- B** Parklets should not interfere with the storm water drainage of the street and electrical wires should not be exposed.
- C** A buffer should be provided from the parklet of at least 2 ft from the travel lanes.
- D** If there are multiple parklets on a street, the programming of the activities should vary between public uses and public/private uses, such as outdoor dining connected to restaurants.



Source: Gruen Associates



La Vague, Montreal, Canada



Spring Street, Los Angeles, CA



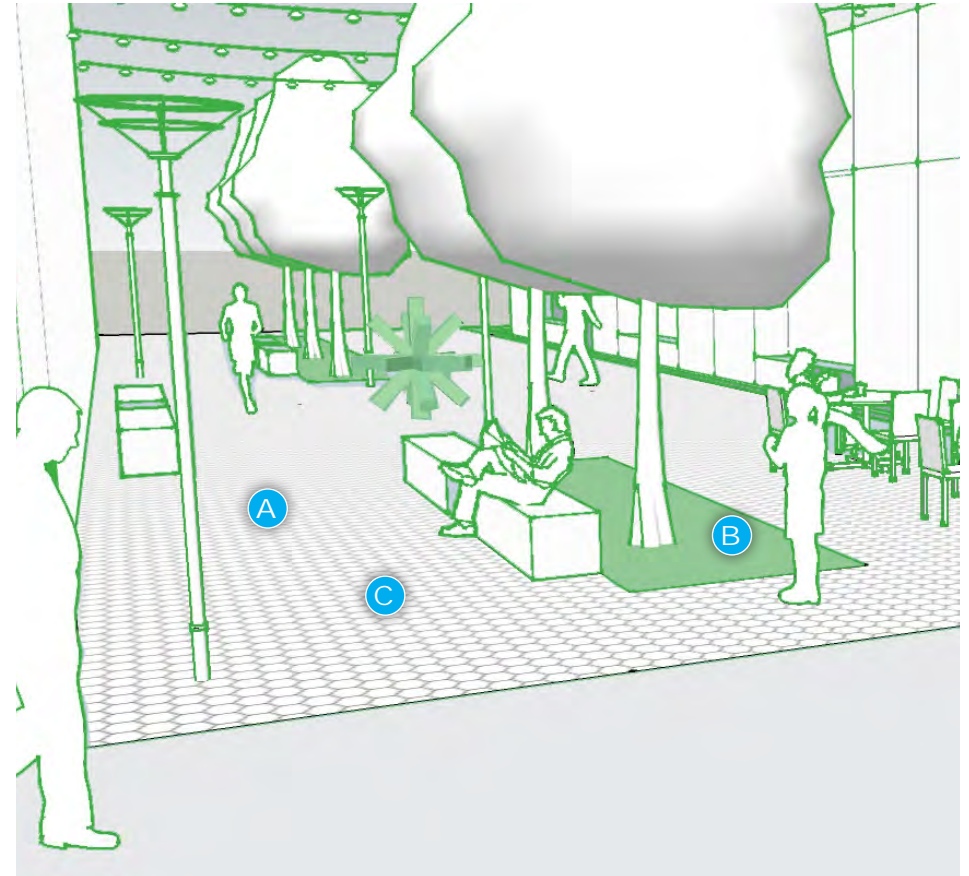
## Open Space / Placemaking

### POCKET PARK

Pocket parks offer small areas for sitting, dining and recreation, and could be located on public or private property. They could occupy underutilized or leftover public right-of-way or small lots owned by the City. Private property pocket parks could be a parking lot no longer used or an easement designated for public uses or connectivity. A variety of social and recreational functions could take place in the pocket parks and certain pocket parks could be designed for a unique use, such as a dog park. Potential elements include lighting, permeable or decorative paving, fitness equipment, tables for games and dining; seating, planting, trees, water features to mask noise, public art, wayfinding, space for and hook-ups for food trucks, play equipment, and community information signage.

### Best Design Practices / Guidelines

- A** Design of parks should accommodate a diversity of users although some depending on size could be devoted to specialty users, such as a children’s playground or a dog park.
- B** Sustainable features, such as bioswales, permeable paving, LED lighting, solar lighting, drought-tolerant landscaping, and canopy trees for shade should be incorporated.
- C** Select sites that consider the orientation of the sun and the opportunity to integrate with viable transit-oriented uses and public art.



Source: Gruen Associates



Chess Park, Glendale, CA



Greenacre Park, New York, NY



## Open Space / Placemaking

### PASEO

A paseo is a landscaped public place containing a path designed for walking and strolling and could also be for biking. Paseos could be a mid-block pedestrian connection or part of a larger trail system connecting neighborhoods, parks, schools, and city sidewalks.

### Best Design Practices / Guidelines

- A** Paseos are wider than normal sidewalks as they contain a wide pathway (15' to 20') with landscaping on either side of the pathway. Typically they contain pedestrian scaled lighting, an occasional bench for resting, trash receptacle, artwork, and could contain pet waste bag dispensers.
- B** Pathways could be serpentine or straight and in some communities are grade separated from major streets.
- C** For security and to create an active edge, portions of buildings and local streets should front on the paseo rather than continuous walls and fences.



Pearl District, Portland, OR



Old Town Pasadena, CA



Valencia, CA



Paseo Nuevo, Santa Barbara, CA



Arts District, Los Angeles, CA



Mercantile Alley, Pasadena, CA



## Open Space / Placemaking

### PARKWAY / LINEAR PARK

A parkway / linear park is a wide landscaped area parallel to a public street curb, a rail line, or a busway and used by pedestrians, bicyclists, joggers and other social, health and recreational opportunities. A linear park may also be in a wide landscaped median of a public street.

### Best Design Practices / Guidelines

- A** As linear paths adjacent to a rail or busway must limit the number of crossings of the transportation facility, pedestrian/vehicular and bicycle crossings should be designed to provide safe, attractive, and pathways for all modes and incorporate wayfinding signage to identify the location of these crossings. If housing is adjacent, quiet zones may be considered.
- B** Pedestrian and bicycle pathways should cross at signalized perpendicular street intersections with consideration for separate striping for pedestrians and bicyclists.
- C** Connecting pathways should meander through canopy trees for shade and colorful planting with active recreational and passive places dispersed as appropriate.
- D** The character of linear parks could vary from the “zen like” low maintenance drought tolerant landscaping with bioswales of the Metro Orange Line Extension to the more vibrant colorful planting, water features and art in the Marina Linear Park in downtown San Diego to the active market space atmosphere of the Ramblas in Barcelona.



Marina Linear Park, San Diego, CA



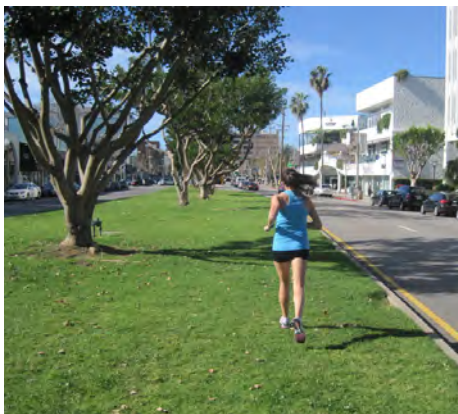
Orange Line Busway, Chatsworth, CA



Ramblas, Barcelona, Spain



Los Angeles River Bike Path



San Vicente Boulevard, Los Angeles, CA



Havnegade Harbour Promenade, Copenhagen



## Open Space / Placemaking

### RECLAIMED STREET / PEDESTRIAN MALL

Providing a sense of place and history involves creating great urban spaces but also preserving, where appropriate, landmarks and historic buildings adjacent to these spaces. The focus of a HQTAs could be a traffic free street reclaimed for pedestrians, active transportation, and transit, often called a pedestrian mall, with dense retail, office, and residential interspersed with the areas historic fabric.

### Best Design Practices / Guidelines

- A** Pedestrian malls could be considered for small towns where they may operate as the main street, or in cities with a strong market for retail, restaurants and entertainment uses such a tourist destinations and university settings.
- B** For economic viability, pedestrian malls should be clustered on 1-4 blocks, should have frequent programming of events and be designed with consistent textured pavings, street furniture, outdoor dining, wayfinding signage, art work, and dramatic lighting.
- C** For flexibility and fire life safety, consideration should be given to incorporating a two lane vehicular path that can be open and closed depending on events and anticipated crowds. This roadway space could be designed curbless with bollards.
- D** Active ground level uses with large clear windows and entrances from the pedestrian mall is essential.



Sunset Triangle, Los Angeles, CA



Former Georges-Pompidou Expressway, Paris



16th Street Mall, Denver, CO



Third Street Promenade, Santa Monica, CA



Church Street, Burlington, VT



Charlottesville, VA



## Open Space / Placemaking

### NEIGHBORHOOD PARK

A neighborhood park is typically family oriented with children’s playgrounds, community gardens, picnicking, and could include swimming, tennis, or basketball courts as well as passive landscaped areas. The neighborhood park could be public or private. If private it may be a part of a housing or mixed use development.

### Best Practices / Design Guidelines

- A** Each neighborhood park’s uses and design should respond to the individual needs and character of a neighborhood.
- B** If on private property the park should be designed to intuitively welcome the public by its visibility and lack of barriers from the sidewalks and streets.



Gladys Jean Wesson Park, Los Angeles, CA



Waterfront Park, Seattle, WA



Madison Park, New York, NY



Pearl District Park, Portland, OR



Spring Street Park, Downtown Los Angeles, CA



Tongva Park, Santa Monica, CA



## Open Space / Placemaking

### PLAZAS / TOWN SQUARE

Historically, a plaza was a grand space adjacent to a public building such as a cathedral, a library, or a civic building. Traditionally plazas contained features including a fountain, space for large events such as parades, performance space like a band shell, sculpture, sitting areas, cafes, and landscaping. A large portion of these plazas were paved. Today urban plazas are public open spaces for gathering next to the street which vary considerably in size, use and character. Representative plazas for HQTAs include:

- A town square which is similar to the traditional plaza mentioned alone and could be the focal point of the HQTA especially if combined with a transit plaza. A wide range of activities could be planned from outdoor cafes, playgrounds, art installations, performances, seasonal activities such as temporary ice skating as well as trees and landscaping for storm water management.
- A transit plaza is an open space adjacent to a transit center and should serve rail or multiple bus lines or both. As this is a space that people will move through as well as stopping and waiting, pedestrian and passenger amenities are appropriate including vendors for newspapers, flower stands and coffee.
- A street plaza is a small public open space immediately adjacent to a sidewalk or an extension of the sidewalk. It may be used for people watching, sitting waiting for the bus, and for eating lunch.
- A plaza open space in front of a major building operates as a gateway or entrance to the building and may be privately owned but open to the public.

### Best Design Practices / Guidelines

- A** Each plaza should contain amenities comfortable for people to use and be planned with enough flexibility to respond to the seasons and time of day.
- B** Plazas should be distinct places which are visible and easily accessible to people from the public street and connected to the pedestrian and bicycle network in the HQTA.
- C** The town square/transit plaza should be easy walking distance of the most dense portions of the HQTA, preferable in the core and appeal to diverse multi-generations.
- D** Amenities to consider for the town square plaza include arbors, trellises, sun terraces, decks, art installations, concert and performance spaces, formal seating areas, secondary sitting areas such as seating walls and steps, lighting, focal points, outdoor dining areas, recreational activities, bicycle hubs, shared vehicles, fountains, play areas, way finding signs and kiosks, trees and landscaping with a variety of color and forms.



South Pasadena Transit Plaza



Del Mar Gold Line Plaza, Pasadena, CA



Bryant Park, New York, NY



City Hall Park, Philadelphia, PA



Wilshire-Grand Plaza, Downtown Los Angeles



Platform, Culver City, CA



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## Toolkit

### C - BUILDING TYPES & PRECEDENTS



#### Building Types

A - Detached Residence

B - Attached Residence

C - Multiplex

D - Mid/Hi-Rise Tower

#### TOD Precedents

## Building Types

Meeting residential and job density targets that support transit ridership and walkable communities can be achieved through a wide variety of building types. The HQTAs Toolkit recognizes the diversity of building stock throughout Southern California by organizing building types into the six typologies listed below. The typologies are informed by the following considerations:

- Primary means of access to units and habitable spaces  
*(from courtyard, intERnal hall)*
- Orientation to street, intERnal open spaces
- Construction type  
*(Wood-frame construction, concrete block, etc.)*
- Parking configuration  
*(surface lot, undERground, podium, on-street, partial excavation)*

Each Vision Plan includes a draft Regulating Concept Plan that generally specifies the typologies that are appropriate for each district. As the HQTAs areas are developed, building types from each typology can be selected, allowing for a great degree of architectural flexibility while enabling cities to meet the density/intensity targets set forth in each Vision Plan.

The following pages include:

### Typologies

A profile of each typology, including the general density/intensity range, mix of land uses, parking and circulation assumptions, and key design considerations

### Building Types

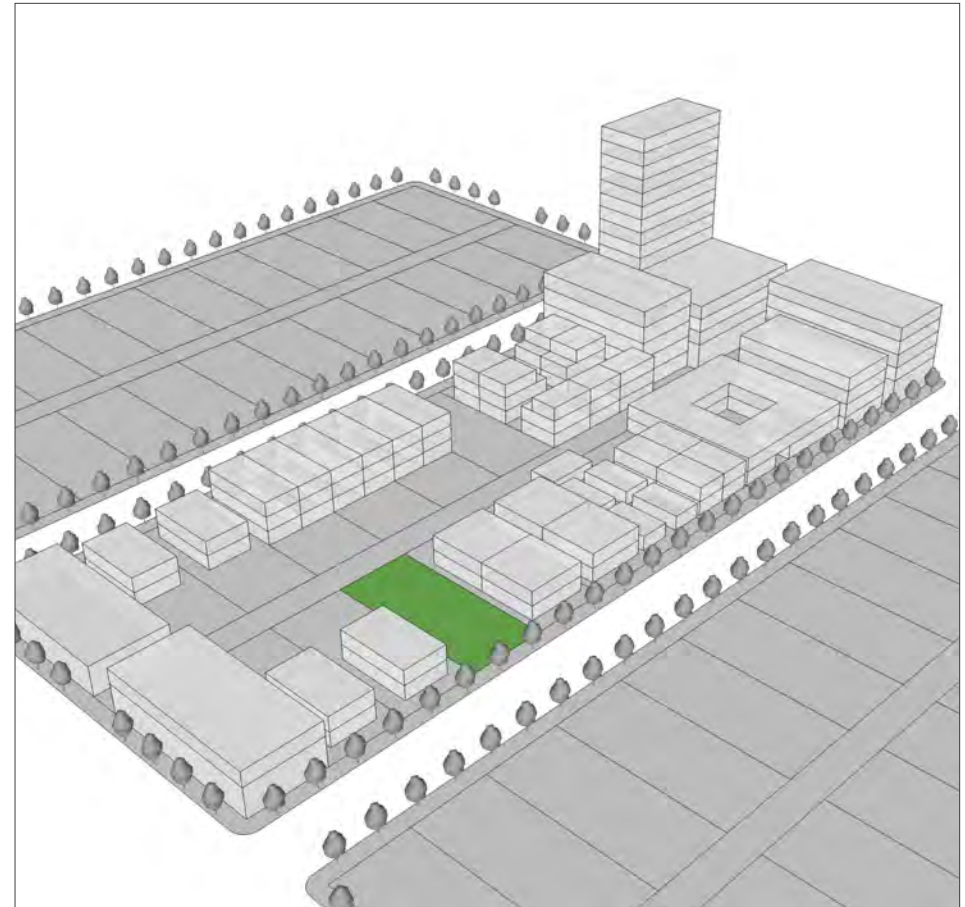
Specific building types for each typology with precedent imagery and diagrams

### Transit-Oriented Development Precedents

Profiles of built TOD projects from throughout California and the United States

A summary table of TOD precedent attributes can be found in the “Additional Resources” section of this Toolkit.

As future rounds of the HQTAs program move forward, this Toolkit will be continuously updated with additional building types and precedents that reflect creative and innovative ways to build livable, transit-supportive communities.



### Typologies

#### A Detached Residence

##### Building Types

- 1 Accessory Dwelling Unit (ADU)
- 2 Shopfront House
- 3 Bungalow Courtyard
- 4 Rosewalk

#### B Attached Residence

- 1 Attached Townhouse
- 2 Hybrid Courtyard
- 3 Duplex
- 4 Live/Work Lofts
- 5 Small Lot Subdivision

#### C Multiplex

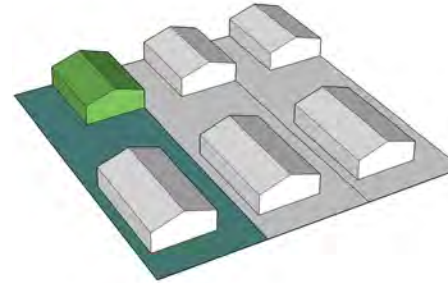
- 1 Triplex/Fourplex
- 2 Stacked Flats
- 3 Flex Apartment/Mixed Use
- 4 LinER Structure

#### D Mid/Hi-Rise Tower

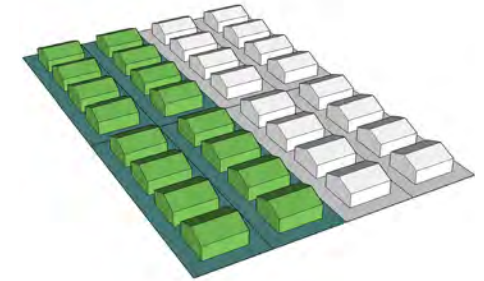
- 1 Mid-Rise Tower
- 2 High Rise Tower

**A B C D Typology: Detached Residence**

The detached residence parti is one of the most common residential building types existing within the SCAG region. Typical for a single-family residence, the form is best characterized as a detached dwelling unit with a front, rear, and side yard. However, the detached parti can also include multiple dwelling units per property, while employing a building form that can match or complement single-family homes, thus still retaining the existing residential character.



Accessory Dwelling Unit (ADU)



Rosewalk

**Typical Lot Size:** 50' x 150'/7,500 sf/0.18 acres

**Number of Units:** 2 - 4

**Density Range:** 10 - 20 du / acre

**FAR:** < 1.0

**Number of Floors:** 1 - 2

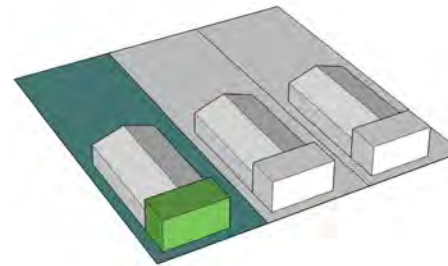
**Parking: Assumption:** 0-1 space per unit

**Unit Size:** studio - 2 bedrooms / 600 - 1,000 sf

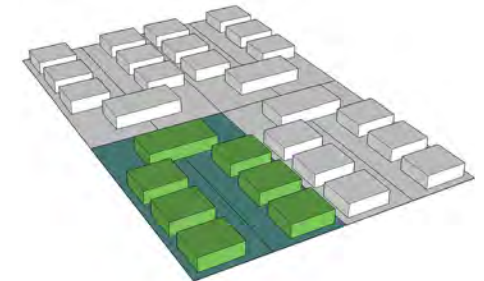
**Residential: / Commercial: Mix:**

Residential - 100%

Commercial - 0%



Shopfront House



Bungalow Courtyard

**Design Considerations**

**Front Setback:** +/- 5' from established front yard line

**Side Setback:** 15% of lot width (e.g. 50' x 20% = 7.5')

**Lot Coverage:** 50% - 75%

**Ground Floor Transparency:** 20%

**A B C D** Typology: Detached Residence

**1** ACCESSORY DWELLING UNIT

Accessory dwelling units are permitted statewide in California since the passage of SB 229 and AB 494 in 2017 and 2018. The bills allow owners of single or multi-family residences to build a secondary unit on their property with minimal restrictions from local zoning ordinances. Units can be free-standing or located above a garage or other structure. Provisions allow for the addition of a studio or 1-bedroom unit of up to 1,200 square feet with bathroom and kitchen facilities, among other conditions.

▼ **Vehicle Access:** Garages or carports can be accessed from an alley or existing streetside curb cut.

▼ **Parking:** No additional parking is required per recent California legislation.

▲ **Pedestrian / Bicycle Access:** Owners are encouraged to provide convenient storage for bicycles, scooters, or other non-motorized forms of transport. Pedestrian access to ADUs can be shared with an existing driveway or provided from the alley.

**For additional information:**

[www.hcd.ca.gov/policy-research/docs/SummaryChangesADULaws.pdf](http://www.hcd.ca.gov/policy-research/docs/SummaryChangesADULaws.pdf)



Piedmont, California



**2** SHOPFRONT HOUSE

Shopfront houses are commercial structures that can be added to existing single-family homes. They are typically found along arterials and lower-density commercial corridors that include a mix of single-family homes and retail. The shopfront house can be an effective way to enliven the street scene while providing neighborhood-serving retail, new stores and boutiques, and coffee shops, among other uses.

▼ **Vehicle Access:** Vehicles typically access shopfronts from an alley.

▼ **Parking:** If alley access is provided, conventional spaces for customers and tandem spaces for employees can be provided. On-street parking is encouraged.

▲ **Pedestrian / Bicycle Access:** Pedestrians and cyclists access shopfronts from the sidewalk.



upper: Minneapolis, Minnesota/lower: Saint Paul, Minnesota

**A B C D** Typology: Detached Residence

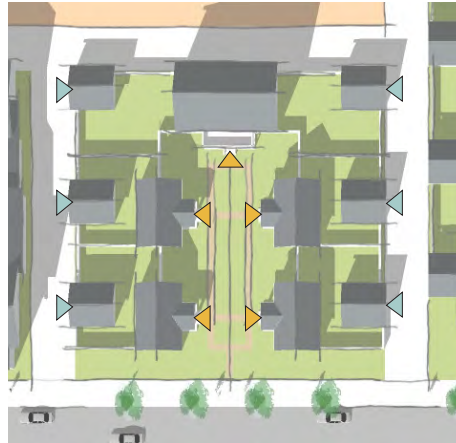
**3 BUNGALOW COURTYARD**

Bungalow courtyards emerged in Pasadena in the early 20th century as a way to provide amenities typically offered in a single family home in a more affordable complex. As its name implies, units are organized around a common courtyard and designed in the low-density (1-2 story) bungalow design. Multiple units can be clustered together (duplex, triplex, etc.) to achieve even higher densities.

▼ **Vehicle Access:** Vehicles can access units from driveways along the side lot line or alley.

▲ **Parking:** Parking can be provided in a common suite of garages or carports in the rear of the complex. Alternatively, each unit may include its own single-stall garage.

▲ **Pedestrian / Bicycle Access:** Pedestrians access units from the courtyard. Secure bicycle storage should be provided in each garage stall.



Gartz Court, Pasadena



Redlands, California

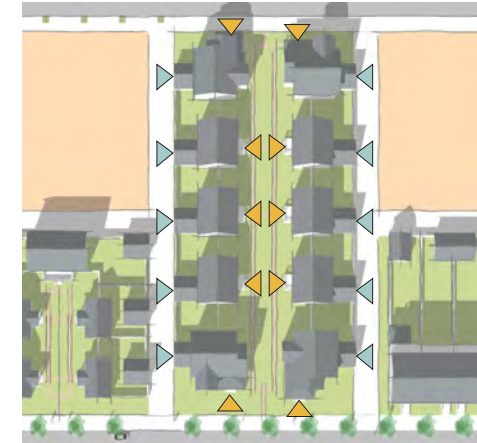
**4 ROSEWALK**

Rosewalks are similar to bungalow courtyards, but the common amenity space takes the form of a narrow mall. Additionally, the mall typically extends across the whole block in a linear arrangement (from street to street). Given space constraints, garages are typically attached to the rear of each unit. Rosewalks achieve slightly higher densities than bungalow courtyards and provide for public pedestrian access and excellent circulation throughout the neighborhood.

▼ **Vehicle Access:** Driveways are provided along the side lot line.

▲ **Parking:** Parking garages are typically attached to the rear of each unit.

▲ **Pedestrian / Bicycle Access:** Units are accessed from the mall, while bike storage should be provided at the rear of each unit.



Venice, CA



Manhattan Beach, CA

**A B C D** Typology: Attached Residence

Attached residences often take the form of townhomes, which are two to three-story units that are primarily accessed from the primary street. Parking is typically located in tuck-under garages at the rear of the residence or in a common lot or garage. Units may take the form of a duplex, with two units, or several units in a row that share party walls. Small-lot subdivisions, similar in scale and density to townhomes, have become popular in the City of Los Angeles, where an ordinance has permitted owners of some R-1 single lots further subdivide the property and sell fee-simple units individually. Contrary to townhomes, small-lot subdivisions are owned individually, do not share a party wall (they are separated by a few inches) and are not a part of an association, which can lower the monthly payment for homeowners.

These residences can be found in a variety of communities throughout Southern California and add slightly more density to a neighborhood than the typical single-family detached home while maintaining an area’s existing character.

**Typical Lot Size:** 50' x 150'/7,500 sf/0.18 acres

**Number of Units:** 2 - 4

**Density Range:** 15- 30 du / acre

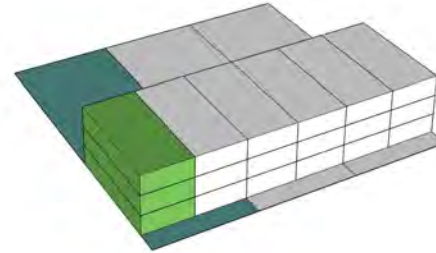
**FAR:** < 1.0

**Number of Floors:** 2 - 3

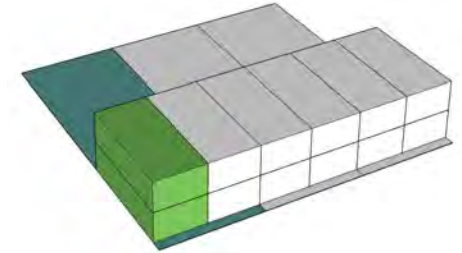
**Parking: Assumption:** 1-2 spaces per unit

**Unit Size:** 1 - 3 bedrooms / 900 - 1,400 sf

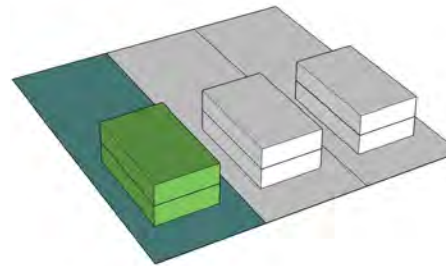
**Residential: / Commercial: Mix:**



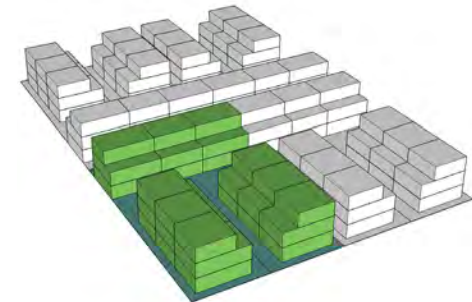
Attached Townhouse



Live/Work



Duplex



Small-Lot Subdivision

**Design Considerations**

**Front Setback:** +/- 0-5' from established front yard line

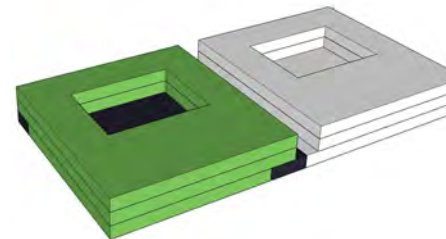
**Side Setback:** 0% of lot width

**Lot Coverage:** 50% - 75%

**Ground Floor Transparency:** 50%

**Frontage Elements:**

- Arcade
- Balcony
- Forecourt
- Porch
- Awning
- Canopy
- Plaza
- Stoop



Hybrid Courtyard

**A B C D** Typology: Attached Residence

**1 ATTACHED TOWNHOUSE**

Attached townhomes offer many of the same benefits of single-family at higher residential densities. Units are typically 1-2 stories with up to three bedrooms and are typically no more than 30-40' wide. This unit size allows for higher densities (20-25 units/acre) when compared with single-family homes (7 units/acre). Attached units can include private backyards and feature minimal sidewalk setbacks. To facilitate pedestrian circulation, at least one public walkway should be provided at or near the center of each block.

▼ **Vehicle Access:** Guests arriving by car park on-street, while townhome owners access each garage from a shared alley.

▶ **Parking:** Up to two stalls can be provided in a detached, private garage that is located off the alley. On-street parking should be provided for guests.

▲ **Pedestrian / Bicycle Access:** Pedestrians access units from the sidewalk and secure bicycle parking should be provided in each private garage.



**2 HYBRID COURTYARD**

Like the bungalow courtyard, hybrid courtyards share a common, central amenity space that is shared among residents and tenants. Hybrid courtyards, however, include a mix of higher density (2-4 story) attached multi-family buildings and/or a mixed-use (retail/office or retail/residential) building that is oriented to the primary street. This building type achieves high densities (40-50 units/acre) and a desirable mix of uses using Type V construction, which is less expensive to build.

▼ **Vehicle Access:** Access is provided from an alley or through a driveway along the side lot line.

▶ **Parking:** Parking is provided in a shared lot at the rear or in a garage below the complex.

▲ **Pedestrian / Bicycle Access:** Ground-floor residential units are accessed from the courtyard, while upper units can be reached from a stairwell and hall. Commercial suites include street-facing entrances.



Washington D.C.



SL70 - Silver Lake, Los Angeles



Mission Meridian Village, South Pasadena

**A B C D** Typology: Attached Residence

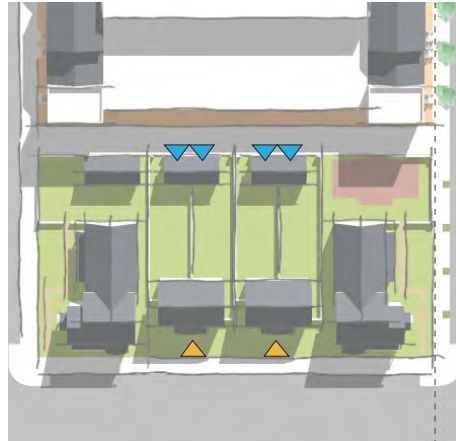
**3** DUPLEX

A structure that consists of two side-by-side or stacked dwelling units, both facing the street and within a single building; with the appearance of a single-family home, it is appropriately scaled to fit within primarily single-family neighborhoods or medium-density neighborhoods.

▼ **Vehicle Access:** Vehicle access is preferred from an alley. If no alley is present, a driveway for single car width along one edge of the lot is acceptable.

▶ **Parking:** Surface parking is located behind the building, or located along an alley, and should be hidden from the street. On-street parking should also be utilized to reduce amount of on-site parking.

▲ **Pedestrian / Bicycle Access:** Pedestrian access can be from the front of the building, or from the side driveway. Side yard duplex should have entrances fronting both streets.



**4** LIVE/WORK LOFTS

Live-work lofts are a unit type that can be integrated into duplexes, detached/attached townhomes, and small lot projects. These units are typically two-or three stories, face the primary street, and include second and/or third-levels that open to the main living space below. Living spaces may be converted to workspace for small retail or office operations, artist studios, or other low volume commercial uses. They help to activate the street in areas where traditional retail is not feasible.

▼ **Vehicle Access:** Commercial patrons park on-street and access units from the sidewalk.

▶ **Parking:** Garages can be provided in shared complexes or as tuck-under stalls facing the alley.

▲ **Pedestrian / Bicycle Access:** Pedestrians and cyclists can access units from the sidewalk. Convenient bicycle parking (typically a pole or rack) should be provided for guests.



Los Angeles



Los Angeles



La Esquina, San Diego



City Place, Santa Ana



- A
- B
- C
- D

## Typology: Multiplex

Multiplexes encompass a wide range of building and unit types. Units may be organized into clusters of 3-4, or part of multi-family buildings that include up to 100+ units. Parking may be located in small surface lots in the rear of a complex, on-street, or within podium (above-grade) or below-grade garages to maximize the density/intensity of development. Multiplexes may also have commercial frontage along the primary and/or secondary streets, greatly enhancing the walkability and vibrancy of the streetscape by adding interest and activity.

Liner structures are single-loaded (units located along only one side of a corridor) and are used to screen the blank facades of free-standing or podium parking structures. Units at-grade can be configured as live-work units or loft-style residential units with entrances facing the primary street.

**Typical Lot Size:** 50' x 150'/7,500 sf/0.18 acres

**Number of Units:** 4 - 100+

**Density Range:** 50 - 125 du / acre

**FAR:** 1.0 - 5.0

**Number of Floors:** 2 - 7

**Parking: Assumption:** 1 space per unit

**Unit Size:** studio - 3 bedrooms / 900 - 1,400 sf

**Residential: / Commercial: Mix:**

Residential - 75% - 100%

Commercial - 0% - 25%

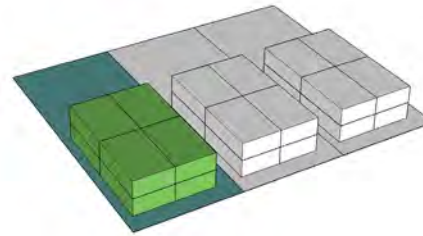
### Design Considerations

**Front Setback:** +/- 5' from established front yard line

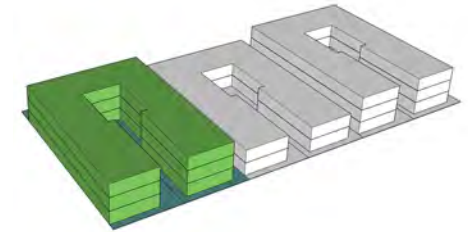
**Side Setback:** 0% - 15% of lot width (e.g. 50' x 20% = 7.5')

**Lot Coverage:** 50% - 75%

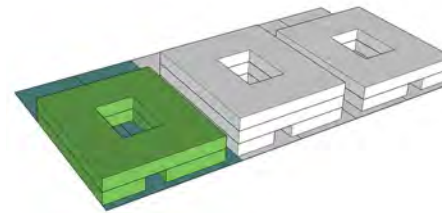
**Ground Floor Transparency:** 50 - 75%



Triplex/Fourplex



Courtyard



Flex Apartment/Mixed Use



Liner Structure

A B **C** D **Typology: Multiplex**

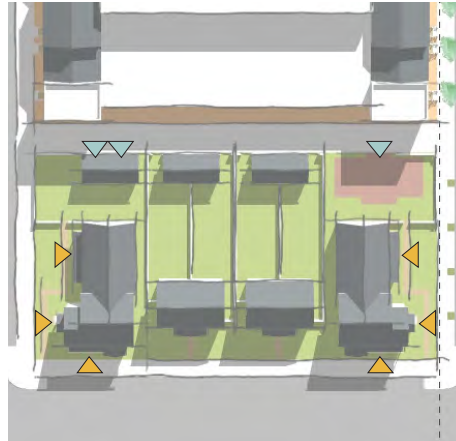
**1 TRIPLEX/FOURPLEX**

Triplexes and fourplexes are similar in concept to the duplex, but can be configured in a variety of ways to achieve higher density structures that come in combinations of three or four units. A common entrance may lead to three or four units, or individual entrances may be located along the front and/or sides of each building.

▼ **Vehicle Access:** Vehicles can access shared lots or garages from the street or alley.

▲ **Parking:** Shared lots or garages can be provided, although some units may not include any dedicated parking. On-street parking should be made available.

▲ **Pedestrian / Bicycle Access:** Pedestrians and cyclists access units from the sides and front of each complex. Bicycle parking should be provided in common garages or racks near the alley.



Los Angeles



Angelino Heights, Los Angeles

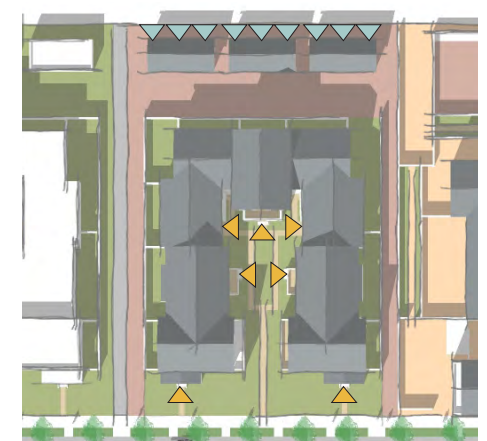
**2 COURTYARD**

Courtyards are similar to bungalow courtyards (see earlier description) but units are fully attached and arranged in higher densities (2-3 stories). This arrangement yields more units per acre, but does not include private backyards. Instead, social interaction among residents is encouraged through a well-designed and maintained common courtyard.

▼ **Vehicle Access:** Vehicles access to the complex is typically through a driveway along the side lot line.

▲ **Parking:** Parking is provided in carports or garages at the rear of the building. Residents park and walk through arcades to access courtyards and units.

▲ **Pedestrian / Bicycle Access:** Pedestrian/cyclist access to each unit is provided from the courtyard.



Mission Meridian Village, South Pasadena



Harper Court, Los Angeles

**A B C D Typology: Multiplex**

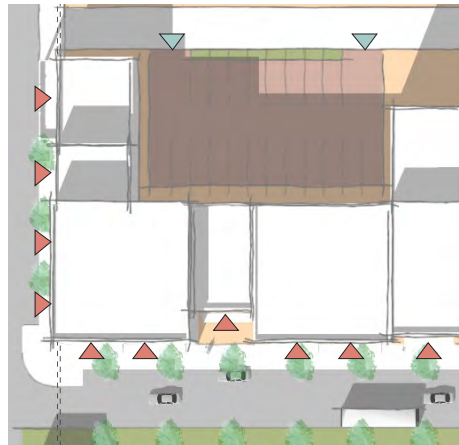
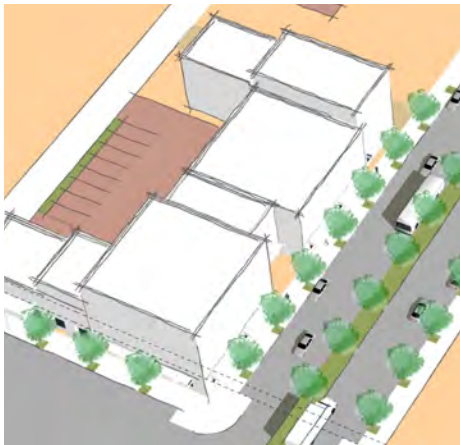
**3 FLEX APARTMENT/MIXED USE**

Flex apartments are a general, catch-all term for the most common building type used in TOD construction. These are multi-family structures between 3 and 7 stories in height, and may be build using Type V or modified Type III construction types, depending on the type and presence of retail. Buildings may be all-residential or include a mix of street-facing retail or commercial units. Densities of 50-100 units/acre are possible depending on the density.

▼ **Vehicle Access:** Vehicles access the complex from curb cuts located at the ends or rear of the building.

▲ **Parking:** Parking for residents and customers is located behind the building, in upper level podiums, or in below-grade garages.

▲ **Pedestrian / Bicycle Access:** Retail suites include street-facing entrances, while residents access units from a separate, private entrance that leads to stairwells/elevators and common corridors.

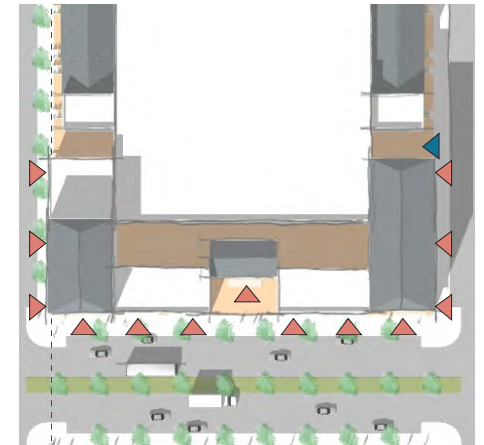


**4 LINER STRUCTURE**

Liner structures are single-loaded (units located along only one side of a corridor) and are used to screen the blank facades of free-standing or podium parking structures. Units at-grade can be configured as live-work units or loft-style residential units with entrances facing the primary street.

▼ **Vehicle Access:** Vehicles park in a podium parking structure with entrances located around the block.

▲ **Parking:** Liner buildings typically wrap above-grade parking structures. Retail customers park on the lower levels and walk through arcades to access street-fronting retail, while residents can park on the upper levels and access units directly from the garage.



SoMa, San Francisco



124 N. 6th St., Williamsburg Virginia



Boulder, Colorado

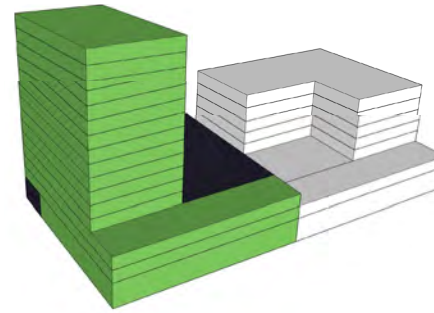


Dallas, Texas

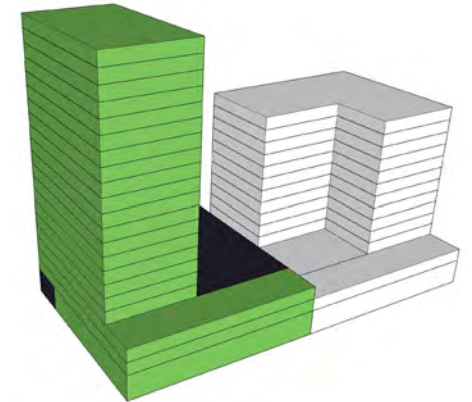
## A B C **D** Typology: Mid/Hi-Rise Tower

Once the market for multi-family residential or commercial units matures, mid-rise or high-rise towers may become feasible. Due to their cost, these structures often require either high per-square foot rent or sales prices or a significant subsidy to make them profitable for developers. Parking is located in above-grade podium structures (construction costs of roughly \$25,000/stall) or in more expensive below-grade garages (approximately \$40,000 or more to construct).

Towers should be sensitively designed at the ground level to avoid creating imposing blank walls. Strategies include recessing structures at floors 3-5 and locating retail, live-work, outdoor cafes and pocket parks, and other active uses at the ground level. Sunlight, wind, and the existing neighborhood context and density are additional key design factors to consider.



Mid-Rise Tower



High-Rise Tower

**Typical Lot Size:** 100' x 100'/10,900+ sf/0.25+ acres

**Number of Units:** 100+

**Density Range:** 100+ du / acre

**FAR:** 6.0+

**Number of Floors:** 8+

**Parking: Assumption:** 1 space per unit

**Unit Size:** 1 - 3bedrooms / 900 - 1,200 sf

**Residential: / Commercial: Mix:**

Residential - 0 - 100%

Commercial - 0 - 100%

### Design Considerations

**Front Setback:** 0"-20' from established front yard line (setbacks acceptable only if plazas, parks, or cafes are included).

**Side Setback:** 0% of lot width

**Lot Coverage:** 50% - 75%

**Ground Floor Transparency:** 75+%

**A B C D** Typology: Mid/Hi-Rise Tower

**1** MID-RISE TOWER

Mid-rise towers are higher density (7-10 story) structures that are organized around a common set of elevators and stairwells. Several residential units can be located on a single floor plate in a number of configurations, from studio to four bedroom units. Parking is provided in above-grade podiums or in garages below-grade. An amenity deck that includes a terrace, barbecue, pools, gyms, and other features is typically included and maintained by the landlord or association.

▼ **Vehicle Access:** Access is provided from curb cuts located from an alley or from an adjacent street if permitted by individual cities.

▲ **Parking:** Parking is located in upper-level podium structures or in below-grade garages.

▲ **Pedestrian / Bicycle Access:** Privately-owned pocket parks and plazas should be provided to encourage social activity and provide for convenient pedestrian/cyclist access and parking.

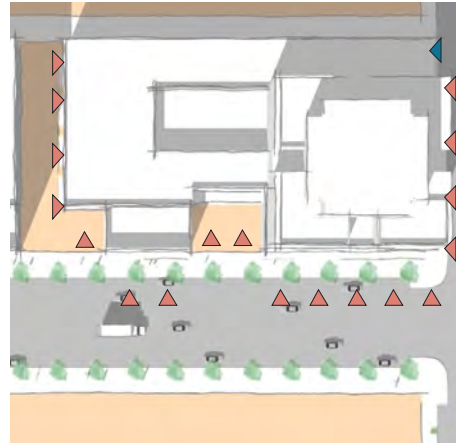
**2** HIGH-RISE TOWER

While mid-rise towers achieve significant densities (100-150 units/acre), high-rise towers can be in excess of 10, 20, 30 or more stories. In most other respects, high-rise towers are similar. A diverse mix of residential, office, retail, or hotel can be included in a high rise tower, with separate entrances provided for each use. High-rise towers are feasible in select few, highly desirable markets (typically central business districts). Existing office towers may also be converted to a mix of uses.

▼ **Vehicle Access:** See mid-rise tower description.

▲ **Parking:** See mid-rise tower description.

▲ **Pedestrian / Bicycle Access:** See mid-rise tower description.



Onyx, Los Angeles



The Apollo, Washington D.C.



Atelier - Downtown Los Angeles



## TOD Precedents

Projects		Project Attributes											
		Place Type	City	Year Completed / Expected	Building Type	Transit Mode	Distance to Transit	Acres	Number of Floors: (max)	Number of Units:	du / acre	Retail / Commercial sf	Estimated Total Development Costs
Urban	<b>820 Olive Street</b>	Mixed Use	Los Angeles	2018	High Rise	Local Rail	1,800	0.87	59	516	593	4,500 sf	
	<b>Ballpark Village</b>	Mixed Use	San Diego	2018	High Rise, Podium Mid Rise	Local Rail	250	3.7	37	713	193	45,000 sf	\$250,000,000
	<b>Middough Arts Center</b>	Commercial	Cleveland	2012	Loft Building (AR)	BRT	400	1.5	5	0	0	300,000 sf	\$41,500,000
	<b>Wilshire / Vermont</b>	Mixed Use	Los Angeles	2007	Podium Block	Local Rail	50	3.24	7	449	139	35,000 sf	\$136,000,000
	<b>The Pearl</b>	Mixed Use	Silver Spring	2016	Podium Tower	Local Rail	1,200		14	284		30,000 sf	
	<b>The Blairs</b>	Mixed Use	Silver Spring	2025	Master Plan Development	Local Rail	1,200	27		2,800	104	450,000 sf	
	<b>YUL</b>	Mixed Use	Montreal	2020	High Rise, Townhouse	Local Rail	600	2.27	38	890	392		\$300,000,000
	<b>The Current</b>	Mixed Use	Long Beach	2016	High Rise	Local Rail	2,100	0.8	17	223	279	6,750 sf	\$70,000,000
	<b>45 Marion Street</b>	Residential	Boston	2016	Stacked Units	Local Rail	1,200	0.4	6	65	163	0 sf	
Town	<b>11405 Chandler Boulevard</b>	Mixed Use	Los Angeles	2017	Podium Mid Rise	Local Rail / BRT	500	0.6	7	82	137	1,000 sf	
	<b>1647 - 55 N. Milwaukee</b>	Mixed Use	Chicago	2016	Stacked Units	Local Rail	600	0.3	5	36	120	7,400 sf	
	<b>Market Station</b>	Mixed Use	Kansas City	2015	Podium Block	BRT / Streetcar	1,600	4.46	5	137	31	4,500 sf	
	<b>Mercer Commons</b>	Mixed Use	Cincinnati	2014	Loft Building, Townhouse	Streetcar	600	1.1	4	95	86	14,500 sf	\$49,000,000
	<b>Mercer III Townhouse</b>	Mixed Use	Cincinnati	2016	Townhouse	Streetcar	700	0.4	4	12	30	0 sf	\$5,500,000
	<b>8 House</b>	Mixed Use	Copenhagen	2010	Podium Block	Local Rail	1,000	7	10	476	68	107,000 sf	
	<b>Ivy Station</b>	Mixed Use	Culver City	2019	Podium Mid Rise	Local Rail	100	5.2	6	200	38	246,000 sf	\$300,000,000
	<b>La Esquina</b>	Mixed Use	San Diego	2012	Live / Work	Local Rail	2,700	0.25	2	7	28	500 sf	
	<b>Linkt Apartments</b>	Mixed Use	Chicago	2017	Stacked Units	Local Rail	500	0.35	5	47	134	3,000 sf	
	<b>East Liberty Transit Center</b>	Mixed Use	Pittsburgh	2016	Podium Mid Rise	BRT	300	6	5	360	60	43,000	\$90,000,000
	<b>Del Mar Station</b>	Residential	Pasadena	2007	Podium Block	Local Rail	50	3.4	7	347	102	11,000 sf	\$77,000,000
	<b>SoCo Walk</b>	Residential	Fullerton	2006	Townhouse, Live / Work	Commuter Rail	100	5.9	3	120	20	Yes	
	<b>Depot at Santiago</b>	Residential	Santa Ana	2018	Stacked Units	Commuter Rail	800	1.35	4	70	52	9,000 sf	\$34,000,000
	<b>Terraces at Santiago</b>	Residential	Santa Ana	2013	Courtyard Apartment	Commuter Rail	2,500	0.85	3	36	42	0 sf	
<b>Centrum Wicker Park</b>	Residential	Chicago	2016	Podium Mid Rise	Local Rail	500	0.5	6	60	120	13,000 sf		

## TOD Precedents

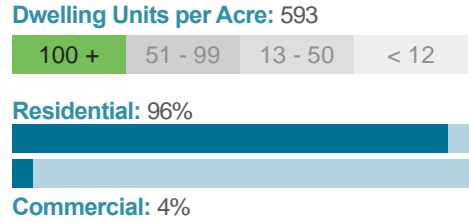
Projects		Project Attributes											
		Place Type	City	Year Completed / Expected	Building Type	Transit Mode	Distance to Transit	Acres	Number of Floors: (max)	Number of Units:	du / acre	Retail / Commercial sf	Estimated Total Development Costs
Town	<b>The Row</b>	Residential	Chicago	2017	Townhouse	Local Rail	1,100	0.8	3	24	30	0 sf	
	<b>Mode Logan Square</b>	Residential	Chicago	2017	Stacked Units	Local Rail	1,100	0.95	4	78	82	6,100 sf	
	<b>Residences @ 245 Sumner</b>	Residential	Boston	2017	Stacked Units	Local Rail	600	0.4	4	34	85	2,250 sf	\$8,000,000
	<b>169 Calle Amsterdam</b>	Residential	Mexico City	2014	Stacked Units	BRT / Local Rail	1,800	0.14	5	15	107	0 sf	
	<b>Kroyer Square</b>	Residential	Copenhagen	2016	Stacked Units	Local Rail	2,400	2.12	5	105	50	Yes	
Village / Suburban	<b>Mission Meridian Village</b>	Mixed Use	South Pasadena	2006	Duplex, Courtyard, Loft	Local Rail	200	1.65	3	67	41	5,000 sf	
	<b>Village Walk</b>	Mixed Use	Claremont	2006	Townhouse	Commuter Rail	2,300	8	3	186	23	0 sf	
	<b>Highland Park</b>	Mixed Use	Buffalo	2022	Master Plan Development	Local Rail	1,600	27	4	717	27	Yes	
	<b>118 Flats</b>	Mixed Use	Cleveland	2013	Townhouse	BRT	200	0.38	3	20	53	0 sf	\$4,000,000
	<b>Takoma Central</b>	Mixed Use	Takoma	2015	Podium Block	Local Rail	600	1.29	5	150	116	10,000 sf	
	<b>Fruitvale Transit Village</b>	Commercial	Oakland	2004	Podium Mid Rise	Local Rail	100	3.6	4	47	13	154,000 sf	
	<b>Victory Building</b>	Commercial	Cleveland	2013	Loft Building	BRT	50	3.24	4	0	0	161,000 sf	\$26,000,000
	<b>Midtown Tech Park</b>	Commercial	Cleveland	2011	Flex Building	BRT	50	6	2	0	0	128,000	
	<b>Metro Village</b>	Residential	Takoma	2017	Podium Block	Local Rail	1,000	1.13	5	150	133	0 sf	
	<b>Residences @ Thayer</b>	Residential	Silver Spring	2014	Stacked Units	Local Rail	2,300	0.5	4	52	104	0 sf	
	<b>Metro Gateway</b>	Suburban Multifamily	Riverside	2017	Stacked Units	Commuter Rail	600	4.26	4	187	44	0 sf	
	<b>Paseos at Montclair North</b>	High Intensity Activity Center	Montclair	2013	Townhouse	Commuter Rail	2,000	15.4	3	385	25	0 sf	
	<b>Grossmont Trolley Center</b>	High Intensity Activity Center	La Mesa	2010	Podium Block	Local Rail	100	9.9	6	527	53	3,000 sf	
	<b>South Bay Town Center</b>	High Intensity Activity Center	Boston	2018	Podium Block, Podium Mid Rise	Local Rail	2,500	10.15	6	475	47	120,000 sf	
	<b>Solaire Wheaton</b>	High Intensity Activity Center	Wheaton	2013	Podium Block	Local Rail	1,200						
Campus	<b>Greenbridge Commons</b>	Campus / University	Cleveland	2011	Stacked Units	BRT	700	1.1	4	70	64	0 sf	\$11,000,000
	<b>Euclid Commons</b>	Campus / University	Cleveland	2012	Stacked Units	BRT		2.8	4	163	58	0 sf	

# TOD Precedents

## 820 OLIVE Downtown, Los Angeles, California

Year Expected: 2018

- Size:** 0.87 acre
- Number of Floors (min/max):** 7 / 50
- Number of Units:** 516
- Retail / Commercial:** 4,500 sf
- Office:** 0 sf
- Hotel Rooms:** 0
- Parking:** 600 subterranean



### Project Features

**Open Space:** Roof patio



### Context

- Place Type Context:** Urban Mixed-Use
- Transit Mode:** Local Rail
- Transit Line(s):** Metro: Blue, Red, Purple, Expo
- Distance to Station / Stop:** 1,800'
- Development Type:** Single lot infill
- Building Type(s):** High-Rise



## TOD Precedents

### BALLPARK VILLAGE Downtown, San Diego, California

Year Expected: 2018

**Size:** 3.7 acres

**Number of Floors (min/max):** 6/37

**Number of Units:** 713

**Retail / Commercial:** 45,000 sf

**Office:** 0 sf

**Hotel Rooms:** 0

**Parking:** 991 subterranean

**Dwelling Units per Acre:** 193



**FAR:** 2.2



**Residential:** 36%



**Commercial:** 64%

### Project Features

**Open Space:** Central plaza, paseo

**Project Cost:** \$250 million



### Context

**Place Type Context:** Urban Mixed-Use

**Transit Mode:** Local Rail

**Transit Line(s):** MTS: Green, Blue, Orange

**Distance to Station / Stop:** 250'

**Development Type:** Multi-building development block

**Building Type(s):** High Rise, Mid Rise Podium

## TOD Precedents

### MIDDOUGH ARTS CENTER Cleveland, Ohio

Year Completed: 2012

**Size:** 1.5 acres  
**Number of Floors (min/max):** 5  
**Number of Units:** 0  
**Retail / Commercial:** 300,000 sf  
**Office:** 0 sf  
**Hotel Rooms:** 0  
**Parking:** 0 on site

**Dwelling Units per Acre:** 0

100 +	51 - 99	13 - 50	< 12
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**FAR:** 4.6

3.0 +	2.0 - 2.9	1.0 - 1.9	< 1
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**Residential:** 0%

**Commercial:** 100%

### Project Features

**Open Space:** None

**Project Cost / Funding Sources:** \$41.5 million / CDA Investment: \$5 million NMTC allocation from CNMIF II



### Context

**Place Type Context:** Urban Commercial

**Transit Mode:** BRT

**Transit Line(s):** RTA: Health-line

**Distance to Station / Stop:** 400'

**Development Type:** Adaptive Reuse

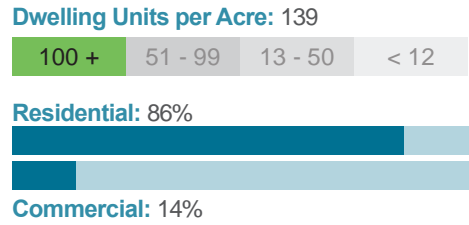
**Building Type(s):** Loft Building

## TOD Precedents

### WILSHIRE / VERMONT Koreatown, Los Angeles, California

Year Completed: 2007

**Size:** 3.24 acres  
**Number of Floors (min/max):** 7  
**Number of Units:** 449  
**Retail / Commercial:** 35,000 sf  
**Office:** 0 sf  
**Hotel Rooms:** 0



#### Project Features

**Open Space:** Central Plaza, paseo

**Project Cost / Funding Sources:** \$136 million

**Special Considerations:** Metro / private joint development. Metro station part of project.



#### Context

**Place Type Context:** City Mixed-Use

**Transit Mode:** Local Rail

**Transit Line(s):** Metro: Red, Purple / 720, 754

**Distance to Station / Stop:** 50'

**Development Type:** Development block

**Building Type(s):** Podium Block

# TOD Precedents

## THE BLAIRS Silver Spring, Maryland

Year Expected: 2025

Size: 27 acres

Number of Units: 2,800

Retail / Commercial: 450,000 sf

Office: 0 sf

Hotel Rooms: 0

Dwelling Units per Acre: 104

100 +	51 - 99	13 - 50	< 12
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### Project Features

**Open Space:** Multiple plazas, central lawn, multiple paseos, private courtyards



### Context

**Place Type Context:** City Mixed-Use

**Transit Mode:** Commuter / Local Rail

**Transit Line(s):** WMATA: Red

**Distance to Station / Stop:** 500'

**Development Type:** Master Plan Development

**Building Type(s):** Podium Mid Rise, Podium Tower, High Rise

## TOD Precedents

### THE PEARL Silver Spring, Maryland

Year Completed: 2018

Size: 1.5 acres

Number of Floors (min/max): 3/14

Number of Units: 284

Retail / Commercial: 30,000 sf

Office: 0 sf

Hotel Rooms: 0

Parking: 177

Dwelling Units per Acre: 174

100 + 51 - 99 13 - 50 < 12

### Project Features

Open Space: Plaza

SCAG Region California **United States** International



### Context

Place Type Context: City Mixed-Use

Transit Mode: Local / Commuter Rail

Transit Line(s): WMATA: Red

Distance to Station / Stop: 1,200'

Development Type: Phase I of Master Plan

Building Type(s): Podium Tower

# TOD Precedents

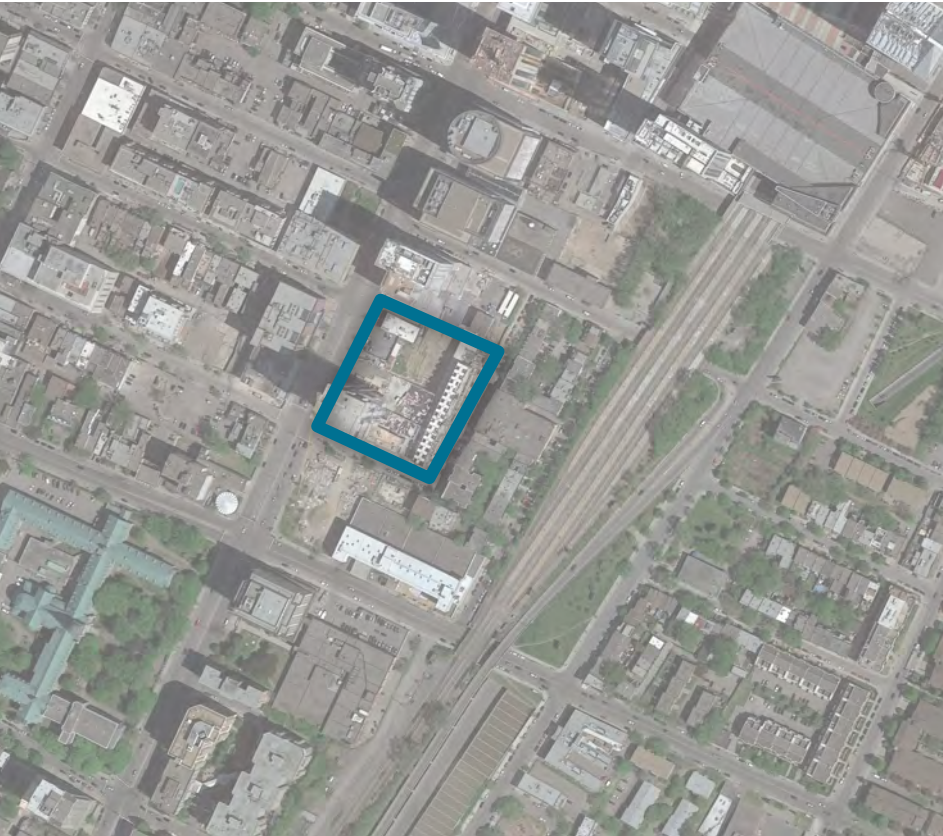
**YUL**  
**Montreal, Canada**

Year Expected: 2020 (2017 Phase I)

**Size:** 2.27 acres  
**Number of Floors (min/max):** 3/38  
**Number of Units:** 890  
**Office:** 0 sf  
**Hotel Rooms:** 0

**Dwelling Units per Acre:** 392

100 +	51 - 99	13 - 50	< 12
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## Project Features

**Open Space:** 23,000 sf garden, roof amenities  
**Project Cost / Funding Sources:** \$300 million



## Context

**Place Type Context:** City Mixed-Use  
**Transit Mode:** Local Rail  
**Transit Line(s):** Metro: Orange  
**Distance to Station / Stop:** 600'  
**Development Type:** Multi-building development block  
**Building Type(s):** High Rise, Townhouse

## TOD Precedents

### THE CURRENT Downtown, Long Beach, California

Year Completed: 2016

Size: 0.8 acre

Number of Floors (min/max): 17

Number of Units: 223

Retail / Commercial: 6,750 sf

Office: 0 sf

Hotel Rooms: 0

Dwelling Units per Acre: 279

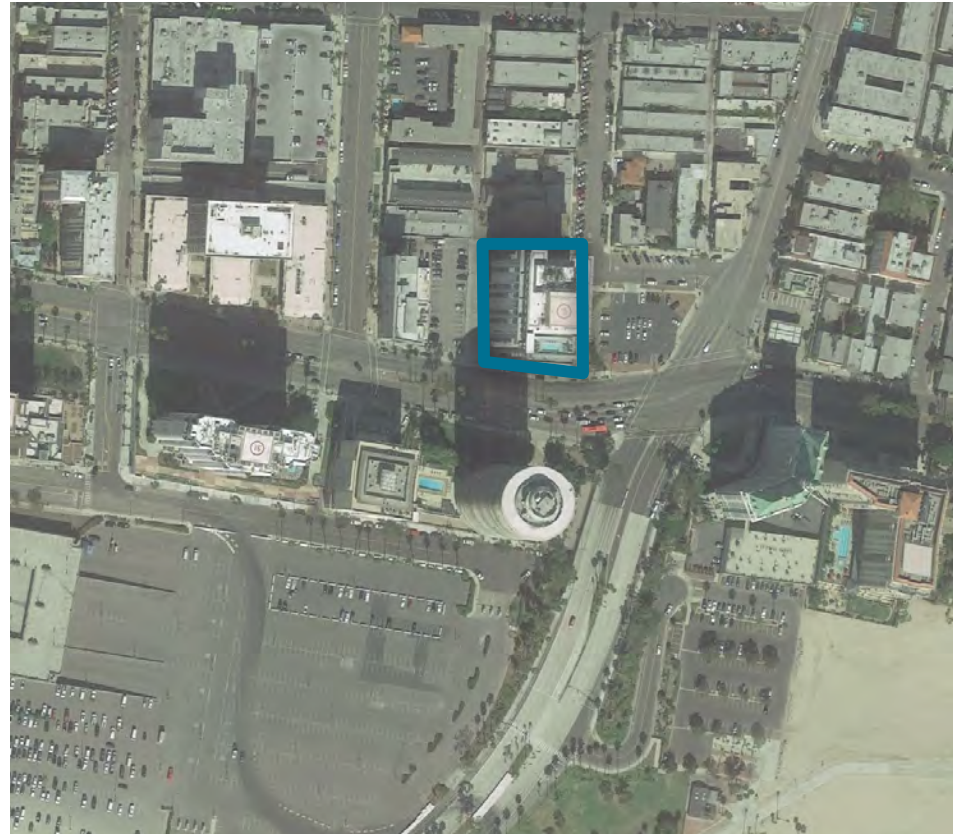
100 + 51 - 99 13 - 50 < 12

#### Project Features

Open Space: Plaza

Project Cost: \$70 million

SCAG Region California United States International



#### Context

Place Type Context: City Residential

Transit Mode: Local Rail

Transit Line(s): Metro: Blue

Distance to Station / Stop: 2,100'

Development Type: Multi-lot infill

Building Type(s): High Rise

## TOD Precedents

### 45 MARION STREET Boston, Massachusetts

Year Completed: 2016

Size: 0.4 acre

Number of Floors (min/max): 6

Number of Units: 65

Retail / Commercial: 0 sf

Office: 0 sf

Hotel Rooms: 0

Parking: 21

Dwelling Units per Acre: 163



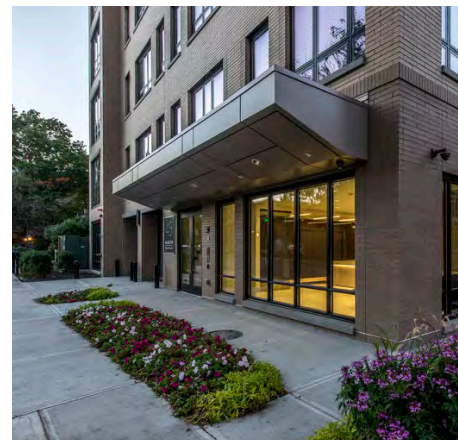
Residential: 100%

Commercial: 0%

### Project Features

Open Space: None

Special Considerations:: Affordable housing project.



### Context

Place Type Context: City Residential

Transit Mode: Local Rail

Transit Line(s): MBTA: C

Distance to Station / Stop: 1,200'

Development Type: Single lot infill

Building Type(s): Stacked Units

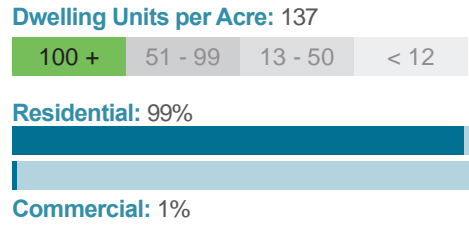


## TOD Precedents

**11405 CHANDLER**  
 North Hollywood, Los Angeles, California

Year Completed: 2017

**Size:** 0.6 acre  
**Number of Floors (min/max):** 7  
**Number of Units:** 82  
**Retail / Commercial:** 1,000 sf  
**Office:** 0 sf  
**Hotel Rooms:** 0



### Project Features

**Open Space:** None

SCAG Region California United States International



### Context

**Place Type Context:** Town Mixed Use  
**Transit Mode:** BRT / Local Rail  
**Transit Line(s):** Metro: Orange / Red  
**Distance to Station / Stop:** 500' / 900'  
**Development Type:** Single lot infill  
**Building Type(s):** Podium Mid Rise

## TOD Precedents

### 1645 N MILWAUKEE Chicago, Illinois

Year Completed: 2016

Size: 0.3 acre

Number of Floors (min/max): 5

Number of Units: 36

Retail / Commercial: 7,400 sf

Office: 0 sf

Hotel Rooms: 0

Parking: 11

Dwelling Units per Acre: 120



FAR: 4.13



Residential: 86%



Commercial: 14%

### Project Features

Open Space: None

Special Considerations: Retained facade of existing historic building as part of development.



### Context

Place Type Context: Town Mixed-Use

Transit Mode: Local Rail

Transit Line(s): CTA: Blue

Distance to Station / Stop: 600'

Development Type: Multi-lot infill

Building Type(s): Stacked Units

## TOD Precedents

### MARKET STATION

Kansas City, Missouri

Year Completed: 2015

SCAG Region California **United States** International

**Size:** 4.46 acres

**Number of Floors (min/max):** 5

**Number of Units:** 137

**Retail / Commercial:** 4,500 sf

**Office:** 0 sf

**Hotel Rooms:** 0

**Parking:** 400

**Dwelling Units per Acre:** 31

100 + 51 - 99 **13 - 50** < 12

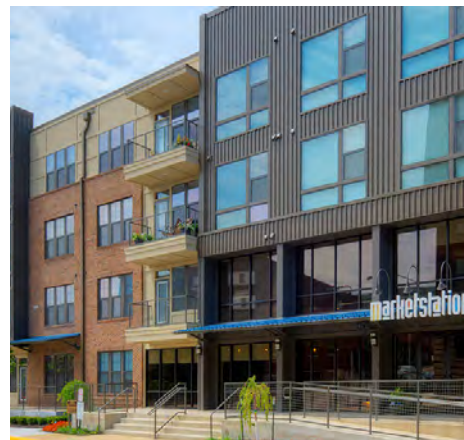
**Residential:** 99%

**Commercial:** 1%

### Project Features

**Open Space:** Private courtyard

**Funding Sources:** \$2 million loan from the Kansas City Council in 2013 through a direct housing assistance program associated with the streetcar development



### Context

**Place Type Context:** Town Mixed-Use

**Transit Mode:** BRT / Streetcar

**Transit Line(s):** KCATA: Main MAX / Streetcar

**Distance to Station / Stop:** 600'

**Development Type:** Development Block

**Building Type(s):** Podium Block

## TOD Precedents

### MERCER COMMONS Cincinnati, Ohio

Year Completed: 2014

Size: 1.1 acres

Number of Floors (min/max): 3/4

Number of Units: 95

Retail / Commercial: 14,500 sf

Office: 0 sf

Hotel Rooms: 0

Parking: 340

Dwelling Units per Acre: 86

100 +	51 - 99	13 - 50	< 12
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#### Project Features

Open Space: None

Project Cost: \$49 million

Special Considerations: Publicly-accessible parking structure



#### Context

Place Type Context: Town Mixed-Use

Transit Mode: Streetcar

Transit Line(s): Cincinnati Bell Connector

Distance to Station / Stop: 600'

Development Type: Multi-lot infill

Building Type(s): Loft Building, Parking Structure, Townhouse

## TOD Precedents

### MERCER III TOWNHOMES Cincinnati, Ohio

Year Completed: 2016

Size: 0.4 acre

Number of Floors (min/max): 3/4

Number of Units: 12

Retail / Commercial: 0 sf

Office: 0 sf

Hotel Rooms: 0

Dwelling Units per Acre: 30

100 + 51 - 99 **13 - 50** < 12

Residential: 100%

Commercial: 0%

### Project Features

Open Space: None

Project Cost: \$5.5 million



### Context

Place Type Context: Town Mixed-Use

Transit Mode: Streetcar

Transit Line(s): Cincinnati Bell Connector

Distance to Station / Stop: 600'

Development Type: Multi-lot infill

Building Type(s): Townhouse

## TOD Precedents

### 8 HOUSE Copenhagen, Denmark

Year Completed: 2010

Size: 7 acres

Number of Floors (min/max): 10

Number of Units: 476

Retail / Commercial: 107,000 sf

Office: 0 sf

Hotel Rooms: 0

Parking: 340

Dwelling Units per Acre: 68

100 +	51 - 99	13 - 50	< 12
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#### Project Features

**Open Space:** Plaza, courtyard, elevated walkway

**Special Considerations:** Building facade terraced to achieve maximum sunlight exposure.



II-C-E-17

#### Context

**Place Type Context:** Town Mixed-Use

**Transit Mode:** Local Rail

**Transit Line(s):** Metro: M1

**Distance to Station / Stop:** 1,000'

**Development Type:** Development Block

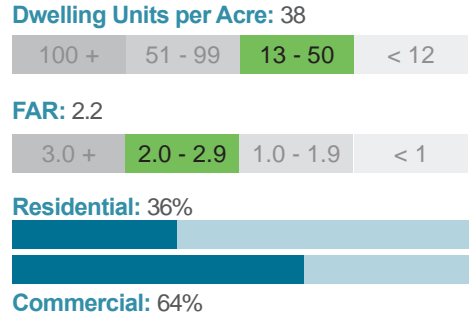
**Building Type(s):** Podium Block

## TOD Precedents

### IVY STATION Culver City, California

Year Expected: 2019

**Size:** 5.2 acres  
**Number of Floors (min/max):** 5/6  
**Number of Units:** 200  
**Retail / Commercial:** 36,000 sf  
**Office:** 210,000 sf  
**Hotel Rooms:** 148  
**Parking:** 1,500 subterranean



### Project Features

**Open Space:** Multiple plazas, central lawn, private courtyards

**Project Cost:** \$300 million

**Special Considerations:** Parking below-grade for development and transit.



### Context

**Place Type Context:** Town Commercial

**Transit Mode:** Local Rail

**Transit Line(s):** Metro: Expo

**Distance to Station / Stop:** 100'

**Development Type:** Multi-building development block

**Building Type(s):** Mid Rise Podium

## TOD Precedents

### LA ESQUINA

Barrio Logan, San Diego, California

Year Completed: 2012

Size: 0.25 acre

Number of Floors (min/max): 2

Number of Units: 7

Retail / Commercial: 500 sf

Office: 0 sf

Hotel Rooms: 0

Parking: surface

Dwelling Units per Acre: 28



FAR: 0.37



Residential: 88%



Commercial: 12%

### Project Features

Open Space: Shared Paseo



### Context

Place Type Context: Town Commercial

Transit Mode: Local Rail

Transit Line(s): MTS: Blue

Distance to Station / Stop: 2,700'

Development Type: Single lot infill

Building Type(s): Live / Work



## TOD Precedents

### LINKT APARTMENTS Chicago, Illinois

Year Completed: 2017

Size: 0.35 acre

Number of Floors (min/max): 5

Number of Units: 47

Retail / Commercial: 3,000 sf

Office: 0 sf

Hotel Rooms: 0

Dwelling Units per Acre: 134

100 + 51 - 99 13 - 50 < 12

### Project Features

Open Space: None

SCAG Region California **United States** International



### Context

Place Type Context: Town Commercial

Transit Mode: Local Rail

Transit Line(s): CTA: Blue

Distance to Station / Stop: 500'

Development Type: Multi-lot infill development

Building Type(s): Stacked Units

## TOD Precedents

### EAST LIBERTY TRANSIT CENTER Pittsburgh, Pennsylvania

Year Completed: 2016

Size: 6.0 acres

Dwelling Units per Acre: 30

Number of Floors (min/max): 5

100 + 51 - 99 **13 - 50** < 12

Number of Units: 360

Retail / Commercial: 43,000 sf

Office: 0 sf

Hotel Rooms: 0

Parking: 554

#### Project Features

Open Space: Plaza, paseo

Project Cost: \$90 million



#### Context

Place Type Context: Town Commercial

Transit Mode: BRT

Transit Line(s): Port Authority: Martin Luther King Jr. Busway

Distance to Station / Stop: 300'

Development Type: Multi-building development block

Building Type(s): Podium Mid Rise

# TOD Precedents

## DEL MAR STATION Pasadena, California

Year Completed: 2007

SCAG Region California United States International

- Size:** 3.4 acres
- Number of Floors (min/max):** 4 / 7
- Number of Units:** 347
- Retail / Commercial:** 11,000 sf
- Office:** 0 sf
- Hotel Rooms:** 0
- Parking:** 1,200 subterranean

**Dwelling Units per Acre:** 102

100 +	51 - 99	13 - 50	< 12
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### Project Features

- Open Space:** Plaza, paseo
- Project Cost:** \$77 million



- Context**
- Place Type Context:** Town Residential
  - Transit Mode:** Local Rail
  - Transit Line(s):** Metro: Gold
  - Distance to Station / Stop:** 50'
  - Development Type:** Multi-building development block
  - Building Type(s):** Podium Block

## TOD Precedents

### SOCO WALK

Fullerton, California

Year Completed: 2006

Size: 5.9 acres

Number of Floors (min/max): 3

Number of Units: 120

Retail / Commercial: xx sf

Office: 0 sf

Hotel Rooms: 0

Dwelling Units per Acre: 20

100 + 51 - 99 **13 - 50** < 12

### Project Features

Open Space: Plaza, paseo

SCAG Region California United States International



### Context

Place Type Context: Town Residential

Transit Mode: Commuter Rail

Transit Line(s): Metrolink: Orange County

Distance to Station / Stop: 100'

Development Type: Multi-building development block

Building Type(s): Townhouse, Live / Work

## TOD Precedents

### DEPOT AT SANTIAGO Santa Ana, California

Year Completed: 2018

**Size:** 1.35 acres

**Number of Floors (min/max):** 4

**Number of Units:** 70

**Retail / Commercial:** 10,900 sf

**Office:** 4,400 sf community space

**Hotel Rooms:** 0

**Parking:** 157 subterranean / 41 commercial

**Dwelling Units per Acre:** 52

100 + **51 - 99** 13 - 50 < 12

SCAG Region California United States International



### Project Features

**Open Space:** Central plaza

**Project Cost / Funding Sources:** \$34 million

**Special Considerations:** 100 percent affordable housing.



### Context

**Place Type Context:** Town Residential

**Transit Mode:** Commuter Rail

**Transit Line(s):** Metrolink: Orange County

**Distance to Station / Stop:** 800'

**Development Type:** Development block

**Building Type(s):** Stacked Units

## TOD Precedents

### TERRACES AT SANTIAGO

Santa Ana, California

Year Completed: 2013

**Size:** 0.85 acres

**Number of Floors (min/max):** 2/3

**Number of Units:** 36

**Retail / Commercial:** 0 sf

**Office:** 0 sf

**Hotel Rooms:** 0

**Dwelling Units per Acre:** 42

100 + 51 - 99 **13 - 50** < 12

#### Project Features

**Open Space:** Central courtyard, playground

SCAG Region California United States International



#### Context

**Place Type Context:** Town Residential

**Transit Mode:** Commuter Rail

**Transit Line(s):** Metrolink: Orange County

**Distance to Station / Stop:** 2,500'

**Development Type:** Multi-building development block

**Building Type(s):** Courtyard Apartments

## TOD Precedents

### CENTRUM WICKER PARK Chicago, Illinois

Year Completed: 2016

Size: 0.5 acre

Number of Floors (min/max): 6

Number of Units: 60

Retail / Commercial: 13,000 sf

Office: 0 sf

Hotel Rooms: 0

Parking: 24 subterranean

Dwelling Units per Acre: 120

100 + **51 - 99** 13 - 50 < 12

SCAG Region California **United States** International

### Project Features

Open Space: Plaza (phase II)



### Context

Place Type Context: Town Residential

Transit Mode: Local Rail

Transit Line(s): Metro: Blue

Distance to Station / Stop: 800'

Development Type: Multi-lot infill

Building Type(s): Podium Mid Rise

## TOD Precedents

### THE ROW WICKER PARK Chicago, Illinois

Year Completed: 2017

Size: 0.8 acre

Number of Floors (min/max): 3

Number of Units: 24

Retail / Commercial: 0 sf

Office: 0 sf

Hotel Rooms: 0

Parking: 48

Dwelling Units per Acre: 30



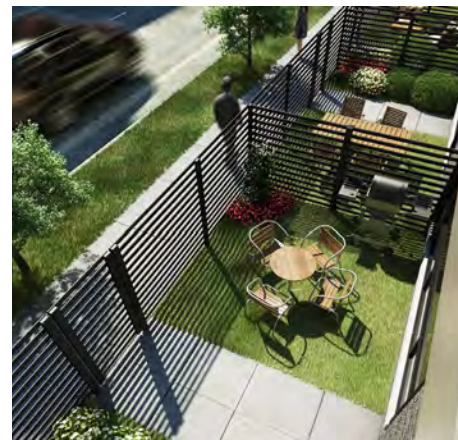
Residential: 100%



Commercial: 0%

### Project Features

Open Space: Private front balcony



### Context

Place Type Context: Town Residential

Transit Mode: Local Rail

Transit Line(s): Metro: Blue

Distance to Station / Stop: 1,100'

Development Type: Development block

Building Type(s): Townhouse



## TOD Precedents

### MODE LOGAN SQUARE Chicago, Illinois

Year Completed: 2017

Size: 0.95 acre

Number of Floors (min/max): 4

Number of Units: 78

Retail / Commercial: 6,100 sf

Office: 0 sf

Hotel Rooms: 0

Parking: 45 subterranean

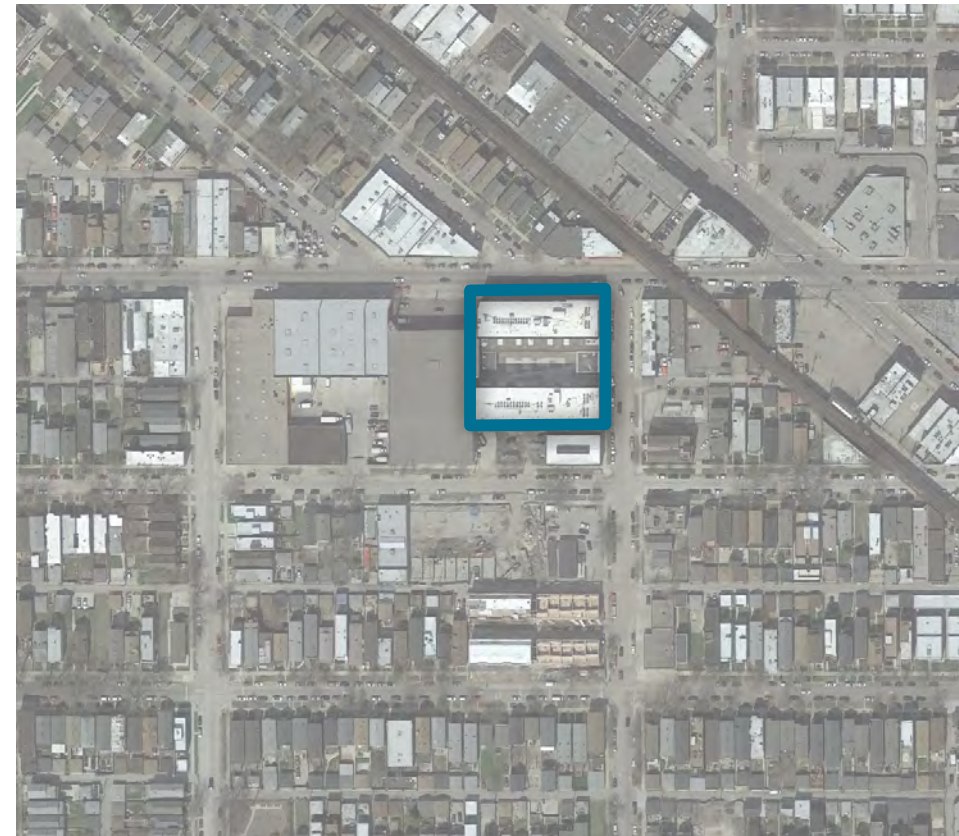
Dwelling Units per Acre: 82

100 + **51 - 99** 13 - 50 < 12

#### Project Features

Open Space: Central courtyard

SCAG Region California **United States** International



#### Context

Place Type Context: Town Residential

Transit Mode: Local Rail

Transit Line(s): Metro: Blue

Distance to Station / Stop: 1,000'

Development Type: Single lot infill

Building Type(s): Podium Mid Rise

## TOD Precedents

### RESIDENCES AT 245 SUMNER Boston, Massachusetts

Year Completed: 2017

**Size:** 0.4 acre  
**Number of Floors (min/max):** 4  
**Number of Units:** 34  
**Retail / Commercial:** 2,250 sf  
**Office:** 0 sf  
**Hotel Rooms:** 0  
**Parking:** 34

**Dwelling Units per Acre:** 85



**FAR:** 2.88



**Residential:** 96%



**Commercial:** 4%

#### Project Features

**Open Space:** None

**Project Cost / Funding Sources:** \$8 million



#### Context

**Place Type Context:** Town Residential

**Transit Mode:** Local Rail

**Transit Line(s):** MBTA: Blue

**Distance to Station / Stop:** 600'

**Development Type:** Single lot infill

**Building Type(s):** Stacked Units

## TOD Precedents

### 169 CALLE AMSTERDAM Mexico City, Mexico

Year Completed: 2014

Size: 0.14 acre

Number of Floors (min/max): 5

Number of Units: 15

Retail / Commercial: 0 sf

Office: 0 sf

Hotel Rooms: 0

Parking: 2 levels subterranean

Dwelling Units per Acre: 107



Residential: 90%

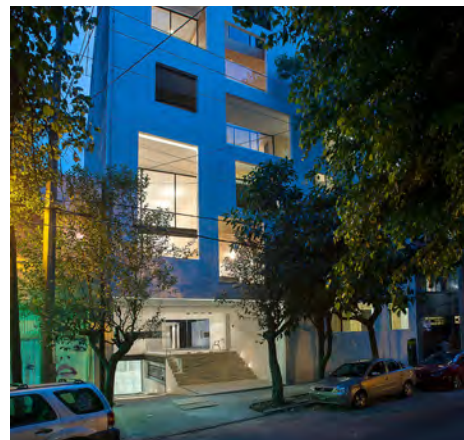


Commercial: 10%

### Project Features

Open Space: Courtyard

Special Considerations: Located within a historic preservation district



### Context

Place Type Context: Town Residential

Transit Mode: BRT / Local Rail

Transit Line(s): Metrobus: Linea 1 / Metro: Linea 9

Distance to Station / Stop: 1,800' / 2,150'

Development Type: Single lot infill

Building Type(s): Stacked Units

## TOD Precedents

### KROYER SQUARE Copenhagen, Denmark

Year Completed: 2016

Size: 2.12 acres

Number of Floors (min/max): 5

Number of Units: 105

Retail / Commercial: ground floor

Office: 0 sf

Hotel Rooms: 0

Parking: None

Dwelling Units per Acre: 50

100 + 51 - 99 **13 - 50** < 12

### Project Features

Open Space: Multiple plazas

SCAG Region California United States **International**



### Context

Place Type Context: Town Residential

Transit Mode: Local Rail

Transit Line(s): Metro: M1

Distance to Station / Stop: 2,400'

Development Type: Multi-building development block

Building Type(s): Stacked Units

## TOD Precedents

### MISSION MERIDIAN VILLAGE South Pasadena, California

Year Completed: 2006

Size: 1.65 acres

Number of Floors (min/max): 2/3

Number of Units: 67

Retail / Commercial: 5,000 sf

Office: 0 sf

Hotel Rooms: 0

Parking: 280

Dwelling Units per Acre: 41

100 +	51 - 99	13 - 50	< 12
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#### Project Features

Open Space: None

SCAG Region California International



#### Context

Place Type Context: Village Mixed Use

Transit Mode: Local Rail

Transit Line(s): Metro: Gold

Distance to Station / Stop: 200'

Development Type: Multi-building development block

Building Type(s): Courtyard apartments, commercial block, duplex, (single-family homes)

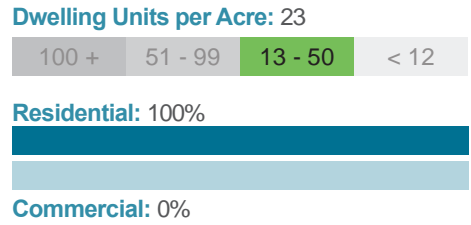
## TOD Precedents

### VILLAGE WALK Claremont, California

Year Completed: 2006

SCAG Region California United States International

**Size:** 8 acres  
**Number of Floors (min/max):** 3  
**Number of Units:** 186  
**Retail / Commercial:** 0 sf  
**Office:** 0 sf



### Project Features

**Open Space:** Pocket Park



### Context

**Place Type Context:** Village Mixed Use  
**Transit Mode:** Local Rail  
**Transit Line(s):** Metro: Gold  
**Distance to Station / Stop:** 200'  
**Development Type:** Multi-building development block  
**Building Type(s):** Courtyard apartments, commercial block, duplex, (single-family homes)

## TOD Precedents

### HIGHLAND PARK Buffalo, New York

Year Expected: 2022 (Phase 1 2018)

Size: 27 acres

Number of Floors (min/max): 4

Number of Units: 717

Retail / Commercial: yes

Office: 0 sf

Hotel Rooms: 0

Dwelling Units per Acre: 27



Residential: 100%

Commercial: 0%



### Project Features

Open Space: Central lawn, pocket parks, plazas, paseo



### Context

- Place Type Context: Village Mixed Use
- Transit Mode: Local Rail
- Transit Line(s): NFTA: Main Street
- Distance to Station / Stop: 1,600'
- Development Type: Master Plan development
- Building Type(s): Townhouse, multiplex, fourplex, duplex

# TOD Precedents

## 118 FLATS Cleveland, Ohio

Year Completed: 2013

- Size: 0.38 acre
- Number of Floors (min/max): 3
- Number of Units: 20
- Retail / Commercial: 0 sf
- Office: 0 sf
- Hotel Rooms: 0
- Parking: 20

Dwelling Units per Acre: 53



Residential: 100%



Commercial: 0%

### Project Features

- Open Space: None
- Project Cost / Funding Sources: \$4 million



### Context

- Place Type Context: Village Mixed Use
- Transit Mode: BRT
- Transit Line(s): RTA: Health-line
- Distance to Station / Stop: 200'
- Development Type: Single lot infill
- Building Type(s): Townhouse



## TOD Precedents

### TAKOMA CENTRAL Takoma, Maryland

Year Completed: 2015

Size: 1.13 acres

Number of Floors (min/max): 5

Number of Units: 150

Retail / Commercial: 10,000 sf

Office: 0 sf

Hotel Rooms: 0

Dwelling Units per Acre: 116



Residential: 90%



Commercial: 10%

### Project Features

Open Space: Courtyard



### Context

Place Type Context: Village Mixed Use

Transit Mode: Local/Commuter Rail

Transit Line(s): WMATA: Red

Distance to Station / Stop: 600'

Development Type: Development block

Building Type(s): Podium Block

## TOD Precedents

### GREENBRIDGE COMMONS Cleveland, Ohio

Year Completed:

- SCAG Region
- California
- United States**
- International

**Size:** 1.1 acres

**Number of Floors (min/max):** 4

**Number of Units:** 70

**Retail / Commercial:** 0 sf

**Office:** 0 sf

**Hotel Rooms:** 0

**Parking:** 22

**Dwelling Units per Acre:** 64



**Residential:** 100%



**Commercial:** 0%

### Project Features

**Open Space:** None

**Project Cost / Funding Sources:** \$11 million

**Special Considerations:** Supportive housing



### Context

**Place Type Context:** Village Mixed Use

**Transit Mode:** BRT

**Transit Line(s):** RTA: Health-line

**Distance to Station / Stop:** 700'

**Development Type:** Single lot infill

**Building Type(s):** Stacked units

## TOD Precedents

### FRUITVALE TRANSIT VILLAGE Oakland, California

Year Completed: 2004

**Size:** 3.6 acres

**Number of Floors (min/max):** 3/4

**Number of Units:** 47

**Retail / Commercial:** 40,000 sf

**Office:** 114,000 sf

**Hotel Rooms:** 0

**Dwelling Units per Acre:** 13



**Residential:** 70%



**Commercial:** 30%

### Project Features

**Open Space:** Central Plaza



### Context

**Place Type Context:** Village Commercial

**Transit Mode:** Local Rail

**Transit Line(s):** BART: Blue, Yellow, Green

**Distance to Station / Stop:** 100'

**Development Type:** Multi-building development block

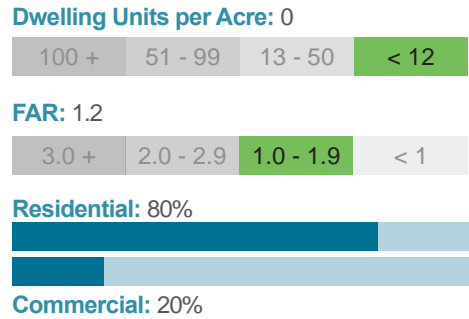
**Building Type(s):** Podium Mid Rise

## TOD Precedents

### VICTORY BUILDING Cleveland, Ohio

Year Completed: 2013

**Size:** 3.24 acres  
**Number of Floors (min/max):** 4  
**Number of Units:** 0  
**Retail / Commercial:** 11,000 sf  
**Office:** 150,000 sf  
**Hotel Rooms:** 0  
**Parking:** 225



#### Project Features

**Open Space:** None

**Project Cost / Funding Sources:** \$26 million / \$1 million Job Ready Site grant by the State of Ohio as well as a \$4.2 million State Historic Tax Credit award



II-C-E-39

#### Context

**Place Type Context:** Village Commercial  
**Transit Mode:** BRT  
**Transit Line(s):** RTA: Health-line  
**Distance to Station / Stop:** 50'  
**Development Type:** Adaptive Reuse  
**Building Type(s):** Loft Building

## TOD Precedents

### MIDTOWN TECH PARK Cleveland, Ohio

Year Completed: 2011

Size: 6 acres

Number of Floors (min/max): 2

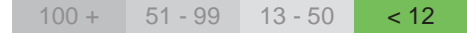
Number of Units: 0

Retail / Commercial: 0 sf

Office: 128,000 sf

Hotel Rooms: 0

Dwelling Units per Acre: 0



FAR: 0.5



Residential: 0%



Commercial: 100%

### Project Features

Open Space: None



### Context

Place Type Context: Village Commercial

Transit Mode: BRT

Transit Line(s): RTA: Health-line

Distance to Station / Stop: 50'

Development Type: Development block

Building Type(s): Flex Building

## TOD Precedents

### METRO VILLAGE Takoma, Maryland

Year Completed: 2017

Size: 1.13 acres

Number of Floors (min/max): 5

Number of Units: 150

Retail / Commercial: 0 sf

Office: 0 sf

Hotel Rooms: 0

Parking: 39

Dwelling Units per Acre: 133



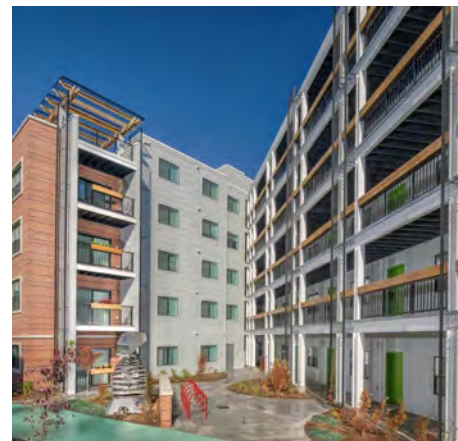
Residential: 100%

Commercial: 0%

### Project Features

Open Space: Plaza, Courtyard

Special Considerations: 80% income-restricted as part of the Low Income Housing Tax Credit (LIHTC) Program, 120 of which will be affordable for residents making 60 percent or less than the Area Median Income (AMI)



II-C-E-41

### Context

Place Type Context: Village Residential

Transit Mode: Local/Commuter Rail

Transit Line(s): WMATA: Red

Distance to Station / Stop: 800'

Development Type: Infill development

Building Type(s): Podium Mid Rise

## TOD Precedents

### RESIDENCES AT THAYER Silver Spring, Maryland

Year Completed: 2014

Size: 0.5 acres

Number of Floors (min/max): 4

Number of Units: 52

Retail / Commercial: 0 sf

Office: 0 sf

Hotel Rooms: 0

Parking: 20

Dwelling Units per Acre: 104



Residential: 100%

Commercial: 0%

#### Project Features

Open Space: Plaza

Funding Sources: \$11.9 million from the Maryland Department of Housing and Community Development and \$4.5 million from the Montgomery County Housing Initiative Fund.



#### Context

Place Type Context: Village Residential

Transit Mode: Local/Commuter Rail

Transit Line(s): WMATA: Red

Distance to Station / Stop: 2,300'

Development Type: Single lot infill

Building Type(s): Stacked Units

# TOD Precedents

## METRO GATEWAY Riverside, California

Year Completed: 2017

Size: 4.26 acres

Number of Floors (min/max): 4

Number of Units: 187

Retail / Commercial: 0 sf

Office: 0 sf

Hotel Rooms: 0

Parking: 300

### Project Features

Open Space: Courtyard

Dwelling Units per Acre: 44



Residential: 100%

Commercial: 0%

- SCAG Region
- California
- United States
- International



II-C-E-43

### Context

Place Type Context: Suburban Multi-family

Transit Mode: Commuter Rail

Transit Line(s): Metrolink: Inland Empire, 91

Distance to Station / Stop: 600'

Development Type: Development block

Building Type(s): Stacked Units



## TOD Precedents

### PASEOS AT MONTCLAIR NORTH Montclair, California

Year Completed: 2013

**Size:** 15.4 acres

**Number of Floors (min/max):** 3

**Number of Units:** 385

**Retail / Commercial:** 0 sf

**Office:** 0 sf

**Hotel Rooms:** 0

**Parking:** 722

**Dwelling Units per Acre:** 25

100 + 51 - 99 **13 - 50** < 12

**Residential:** 100%

**Commercial:** 0%

### Project Features

**Open Space:** Central park, paseo

**Project Cost / Funding Sources:** \$25.7 million / Canyon-Johnson Urban Funds provided a \$25.7 million equity investment

SCAG Region California United States International



### Context

**Place Type Context:** High Intensity Activity Center

**Transit Mode:** Commuter Rail

**Transit Line(s):** Metrolink: San Bernardino

**Distance to Station / Stop:** 2,000'

**Development Type:** Planned development

**Building Type(s):** Townhouse

## TOD Precedents

### GROSSMONT TROLLEY CENTER

Year Completed: 2010

La Mesa, California

Size: 9.9 acres

Number of Floors (min/max): 5/6

Number of Units: 527

Retail / Commercial: 3,000 sf

Office: 0 sf

Hotel Rooms: 0

Dwelling Units per Acre: 53



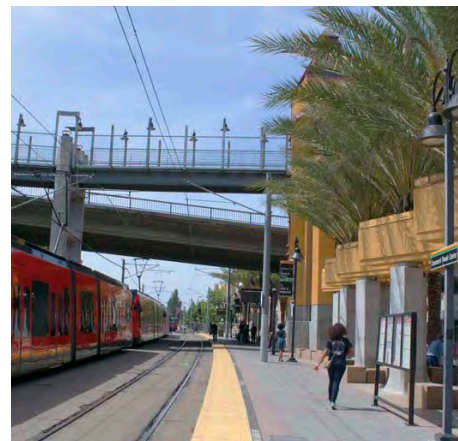
Residential: 99%



Commercial: 1%

### Project Features

Open Space: Plaza, private courtyards



### Context

Place Type Context: High Intensity Activity Center

Transit Mode: Local Rail

Transit Line(s): MTS: Green, Orange

Distance to Station / Stop: 100'

Development Type: Multi-block development

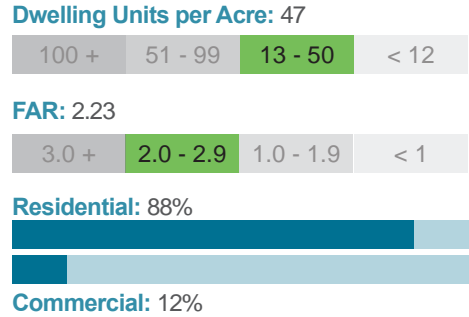
Building Type(s): Podium Block

# TOD Precedents

## SOUTH BAY TOWN CENTER Boston, Massachusetts

Year Expected: 2018

- Size: 10.2 acres
- Number of Floors (min/max): 6
- Number of Units: 475
- Retail / Commercial: 120,000 sf
- Office: 0 sf
- Hotel Rooms: 130
- Parking: 1,095



### Project Features

Open Space: Plaza, paseo, pocket park



### Context

- Place Type Context:** High Intensity Activity Center
- Transit Mode:** Commuter Rail / Local Rail
- Transit Line(s):** MBTA: Fairmount, Franklin / Red
- Distance to Station / Stop:** 1,000' / 2,400'
- Development Type:** Big box retail center redevelopment
- Building Type(s):** Podium Block, Podium Mid Rise

## TOD Precedents

### SOLAIRE WHEATON Wheaton, Maryland

Year Completed: 2015

Size: 1.5 acres

Number of Floors (min/max): 6

Number of Units: 232

Retail / Commercial: 0 sf

Office: 0 sf

Hotel Rooms: 0

Dwelling Units per Acre: 154



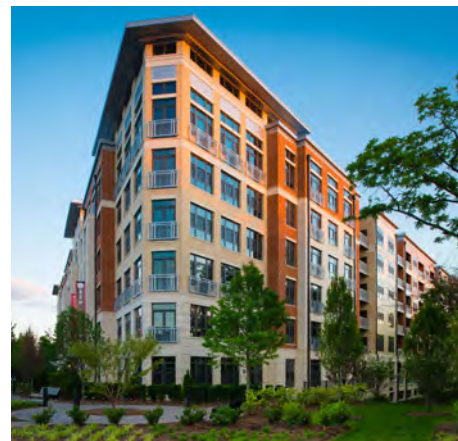
Residential: 100%

Commercial: 0%

### Project Features

Open Space: Courtyard

Special Considerations: LEED Silver; 7,000 sf of amenity space



### Context

Place Type Context: High Intensity Activity Center

Transit Mode: Local/Commuter Rail

Transit Line(s): WMATA: Red

Distance to Station / Stop: 1,200'

Development Type: Development block

Building Type(s): Podium Block

## TOD Precedents

### EUCLID COMMONS Cleveland, Ohio

Year Completed: 2012

Size: 2.8 acres

Number of Floors (min/max): 4

Number of Units: 163

Retail / Commercial: 0 sf

Office: 0 sf

Hotel Rooms: 0

Dwelling Units per Acre: 58



FAR: 1.9



Residential: 100%



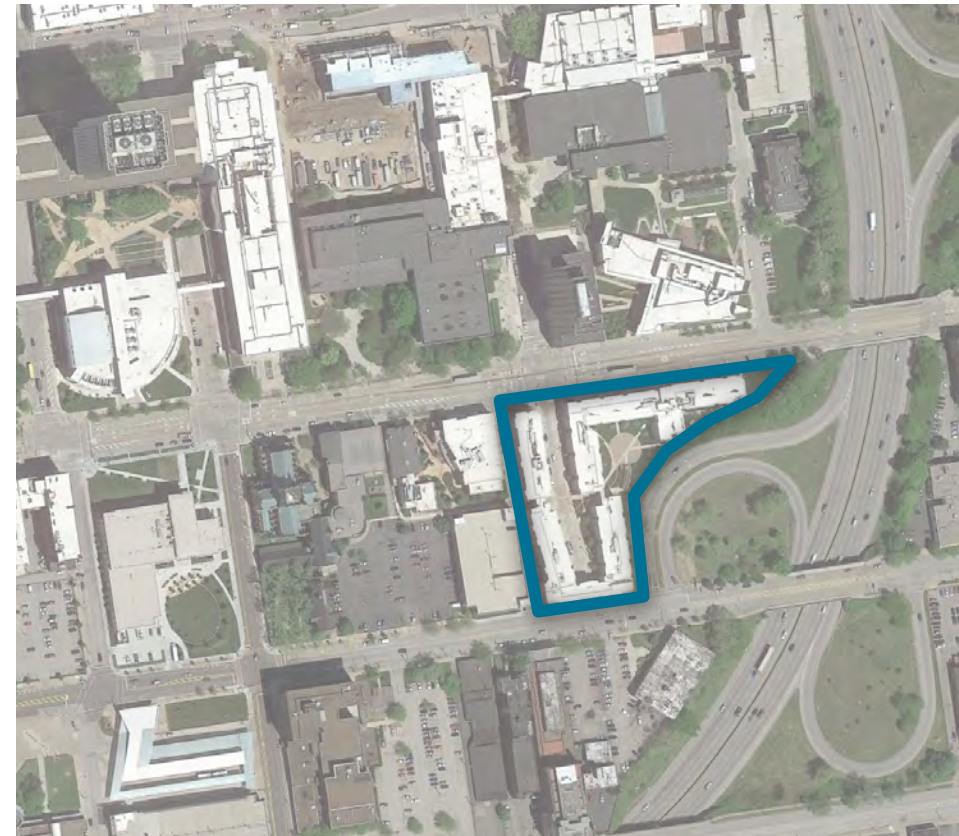
Commercial: 0%

### Project Features

Open Space: Courtyard

Project Cost / Funding Sources: \$33.6 million

Special Considerations: Student housing; LEED Silver



### Context

Place Type Context: Campus / University

Transit Mode: BRT

Transit Line(s): RTA: Health-line

Distance to Station / Stop: 100'

Development Type: Development block

Building Type(s): Stacked Units

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