



# San Bernardino Briefing Book

HIGH QUALITY TRANSIT AREA  
PILOT PROJECT

Southern California  
Association of Governments

April 2019



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Additionally, the contents of this report reflect the views of the author who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of SCAG or DOT. This report does not constitute a standard, specification, or regulation.



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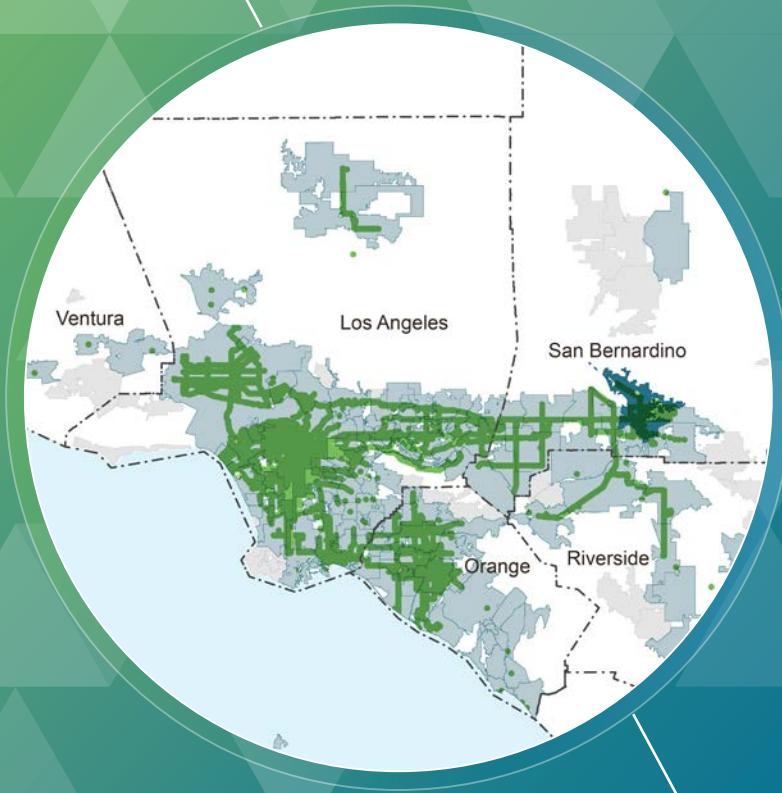
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# Part 1

## Executive Summary



## High Quality Transit Area (HQTA) Analysis Pilot Program

## EXECUTIVE SUMMARY

### Pilot Program Overview

The High Quality Transit Area (HQTA) Analysis program was created by SCAG in 2017 to help implement the goals and objectives of the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The 2016 RTP/SCS, the 30-year plan for the Southern California Region, forecasts that 46% of future household growth will be located in HQTAs, which comprise just 3% of land area. HQTAs are areas within easy walking distance to current or anticipated transit service with 15-minute or better service. The three main goals of the HQTA Analysis program are as follows:

- Implement the RTP/SCS for future job and housing growth near high quality transit through actionable transit-oriented development (TOD) projects
- Promote higher-density development and active transportation within HQTAs
- Reduce Greenhouse Gases (GHG) and Vehicle Miles Traveled (VMT) by 21% over 2005 levels

### Benefits of Transit-Oriented Development

Transit-Oriented Development (TOD) is a vibrant, mixed-use form of urban development that clusters a variety of housing types, employment opportunities, and community amenities at or near major transit stations. Integrated clusters of TODs establish a multi-modal network of public and private realm improvements that allow residents to walk, bike, or take transit to major attractions, which results in several environmental, economic, and social benefits:

#### Environment

- Increased transit ridership
- Reduced VMT
- Improved air quality through reduced GHG emissions
- Conservation of land and open space

#### Social

- Increased housing and employment choices
- Greater mobility choices
- Health benefits
- Enhanced sense of community
- Enhanced public safety
- Increased quality of life

#### Economic

- Catalyst for economic development
- Redevelopment of vacant and underutilized properties
- Increased property value
- Decreased infrastructure costs
- Revenue for transit systems
- Reduced household spending on transportation
- Increase in affordable housing

### In this briefing book:

#### Part 2: Station Area Profile

The Station Area Profile describes the current planning, urban design, socioeconomic, and transportation context within the Marketplace HQTA Study Area. The Profile also includes a summary of previous planning efforts.

#### Part 3: Outreach

Outreach efforts included public meetings and reoccurring correspondence with City of San Bernardino staff members.

#### Part 4: Opportunities & Constraints Analysis

This analysis includes a summary of urban design, land use, and mobility constraints and identifies potential investments that will support walking, biking, and the use of transit.

#### HQTA Toolkit (Appendix)

The development strategy and priority projects outlined in the Vision Plan are tied to the HQTA Toolkit, which will give the City a range of options for meeting the goals and objectives set forth in the Vision Plan. The Toolkit includes transportation investments with cost estimates, TOD precedent projects, open space typologies, and other components of an innovative HQTA.



# Part 2

## Station Area Profile

The Station Area Profile is a summary of some of the physical and regulatory conditions currently existing within the study area.

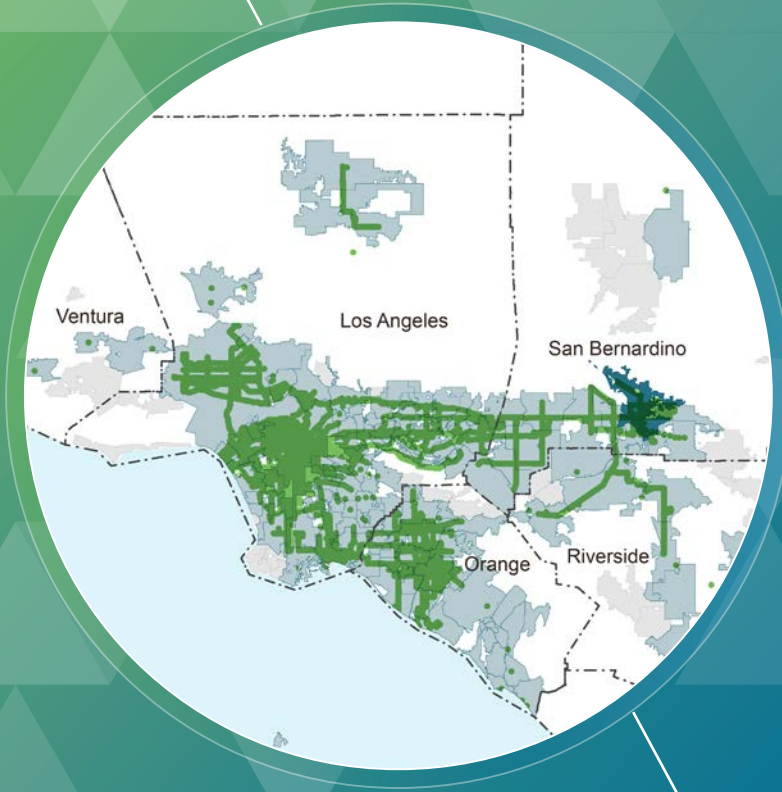
### Overview

- San Bernardino High Quality Transit Area
- Downtown San Bernardino Transit Center

### Socioeconomic Profile

- Demographic Profile
- Employment Profile
- Employment Trends

### Previous Planning Efforts

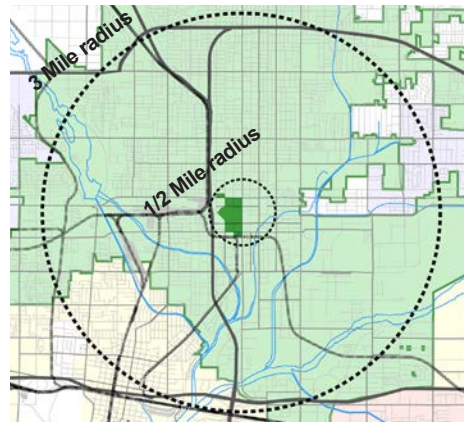





# San Bernardino High Quality Transit Area

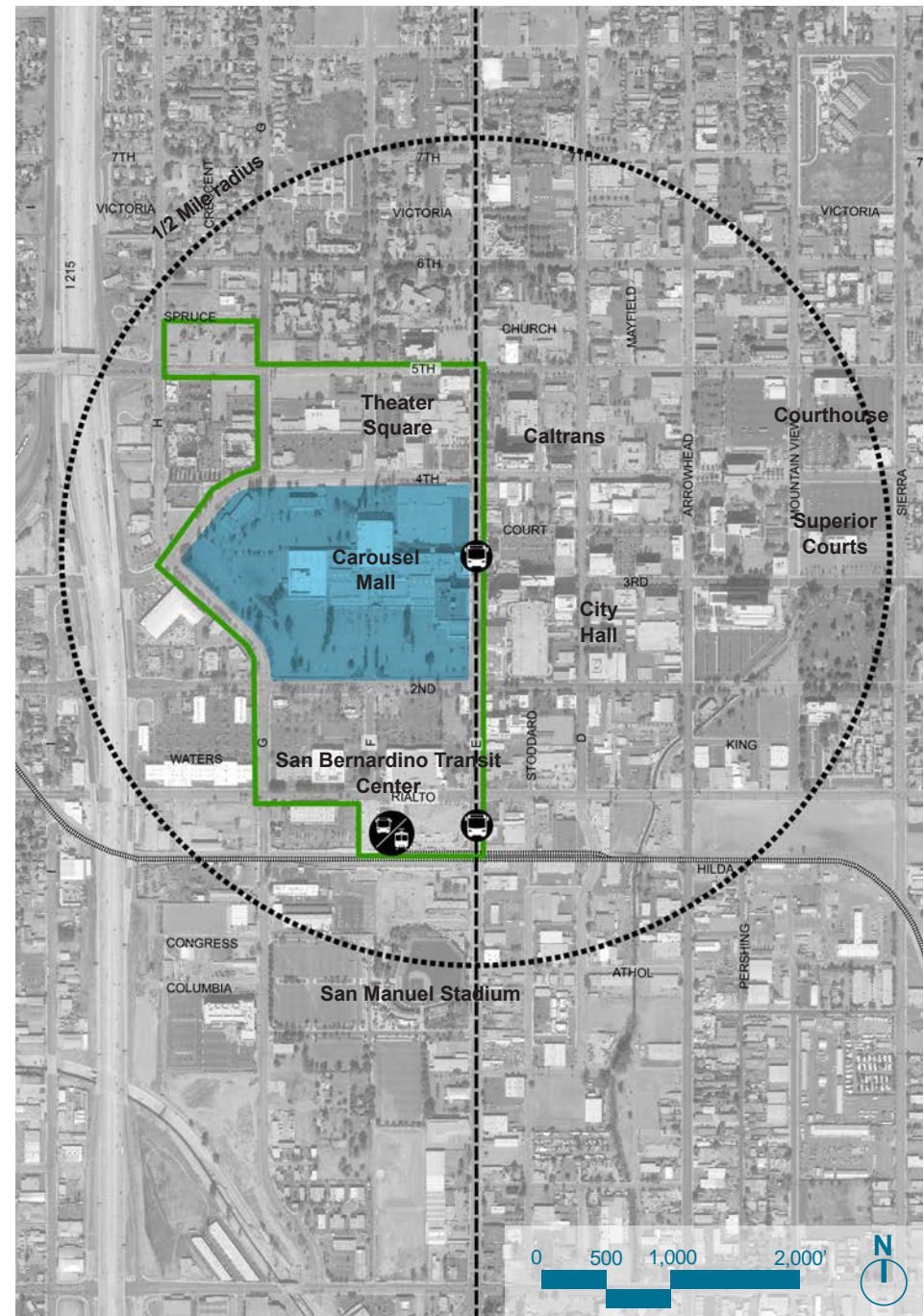
The City of San Bernardino's HQT Area is centrally located in the City's downtown core, which includes the new San Bernardino Regional Transit Center and the now closed Carousel Mall. The HQT Area is as represented in the map at right. It currently includes stops for the San Bernardino Express (SbX) Bus Rapid Transit line, regional and local buses, stops for Metrolink, and stops for the future Redlands Passenger Rail "Arrow" transit line, providing multi-modal access to Downtown San Bernardino. The City has adopted a TOD overlay zone for all properties within half-mile of their SbX BRT stops and will prepare a Downtown Specific Plan to incorporate TOD principles. The area is about three miles north of Hospitality Lane, which includes a cluster of hospitality and employment activities.

HR&A has defined a study area around the center of the Carousel Mall as the Study Area for socio-economic and demographic profile presented on pages 10-12. In addition to the Mall, the Study Area includes a large number of City offices and County facilities, as well as the 8,000 seat San Manuel Stadium, home of the Inland Empire 66ers, a San Bernardino-based minor league baseball team.

The City of San Bernardino is currently experiencing conditions similar to those experienced by "rust-belt" cities: declining pedestrian and economic activity. Given the significant transit investments, strategic location in the Inland Empire, and relative affordability, Downtown presents a significant opportunity for economic growth and reinvestment.



-  Metrolink Station and Corridor
-  Carousel Mall
-  HQT Study Area



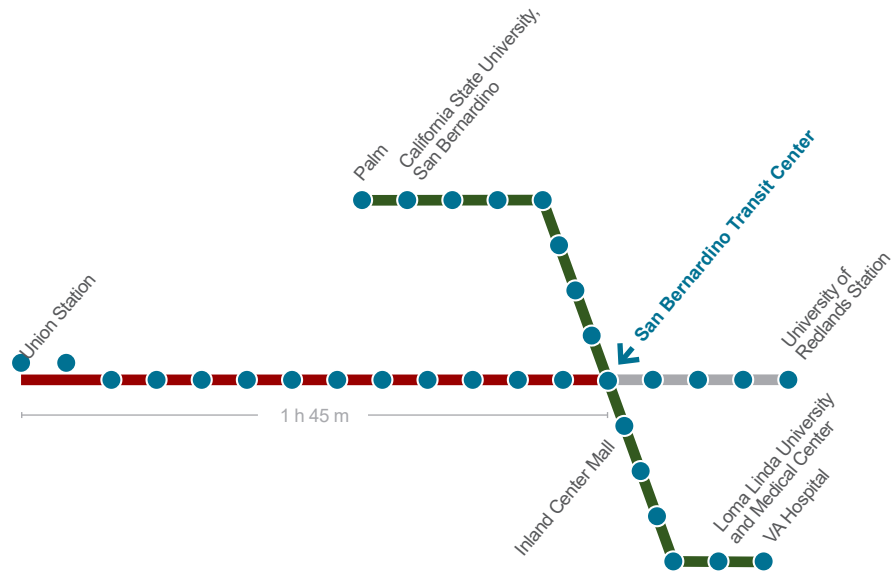


# Downtown San Bernardino Transit Center

The HQTA area will be near the intersection of three major transit lines: the existing San Bernardino Metrolink Commuter Rail Corridor, the existing San Bernardino Express (sbX) Green Line bus rapid transit system, and the forthcoming Redlands Passenger Rail Line.

The sbX Green line offers service to major destinations in the cities of San Bernardino and Loma Linda; expansions to the BRT system are in place. sbX ridership has increased since the Metrolink extension to Transit Center in December 2017. At present, there is no sbX weekend service to the center but plans are in place to introduce weekend service in 2019.

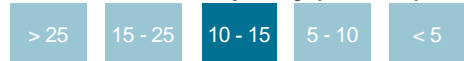
## Downtown San Bernardino Transit Center Transit Lines



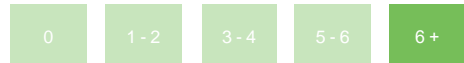
### Service Type



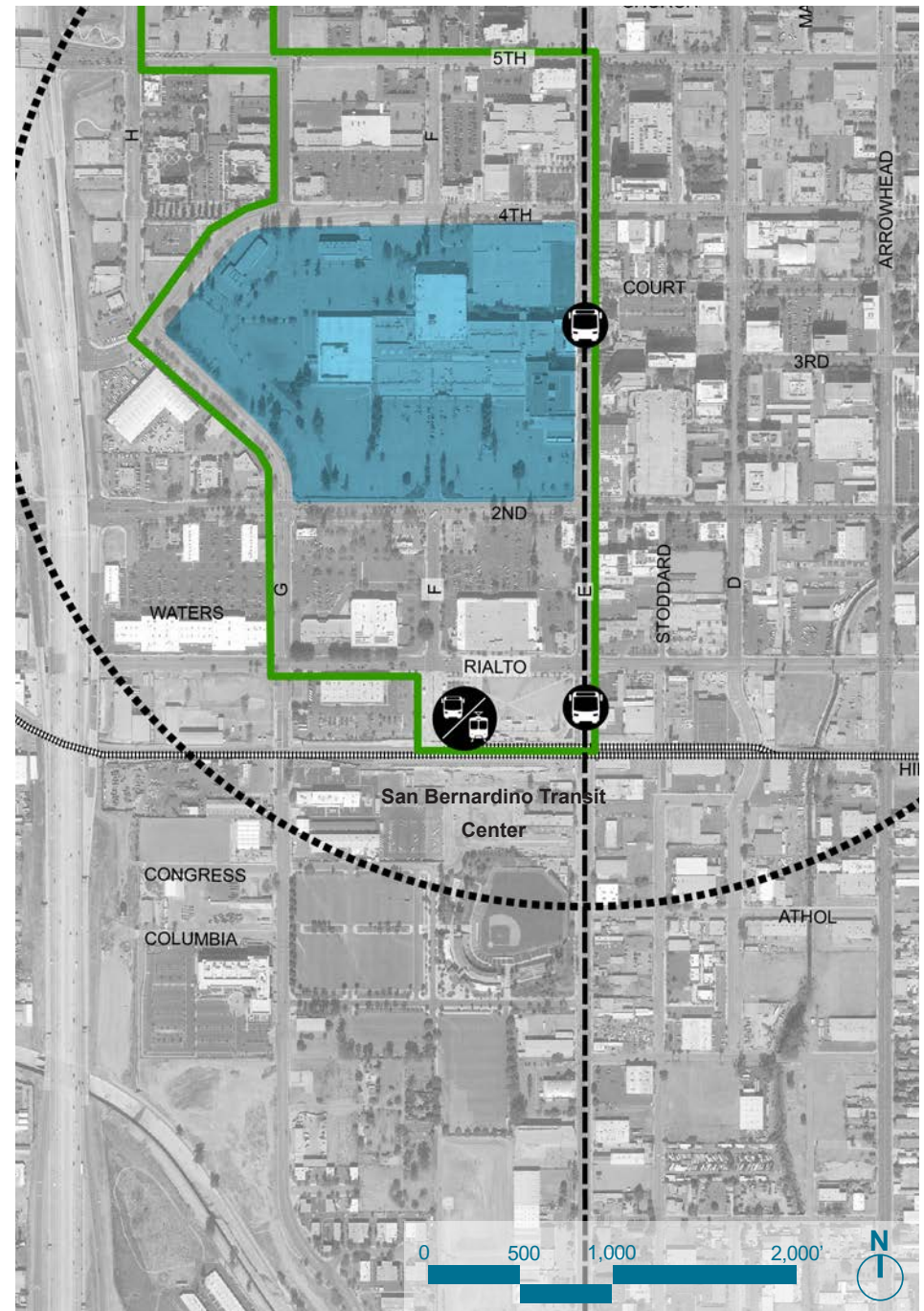
### sbX Peak Hour Frequency (minutes)



### Transit Routes within 1/2 mile



- sbX Green Line
- Metrolink San Bernardino Line
- Future Redlands Rail Line
- sbX Stop and Corridor
- Transit Center
- Carousel Mall
- HQTA Study Area



## Demographic Profile

## SOCIOECONOMIC PROFILE

The City of San Bernardino includes approximately 10 percent of the County's population. Most households are low to moderate income with an almost equal share of owners and renters. Both the City and Study Area have a similar racial and ethnic composition, but otherwise their demographic profiles differ.

The Study Area has a relatively small population of approximately 1,343 people, and the median household income are substantially lower than both the City and County. There is a significant concentration of persons aged 65 years and above, due to the presence of a number of senior housing facilities in the Study Area. Significant unemployment rates and substantially older population, as well as the higher percentage of high school dropouts, in the Study Area compared to the region, all likely contribute to the very low median income. The ratio of renters to owners is higher in the Study Area relative to the City and County. Renters in the Study Area predominantly occupy multifamily units and owners occupy single-family residences.

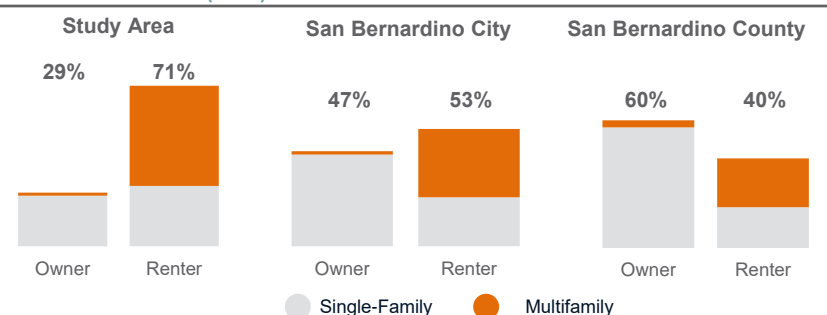
DEMOGRAPHICS (2017)	Study Area	San Bernardino City	San Bernardino County
<b>Total Population</b>	1,343	218,604	2,153,382
Pop. Density (Per Sq. Mile)	965	3,616	104
<b>Annual Growth Rate</b>			
Historic (2010-2017)	1.25%	0.59%	0.81%
Projected (2017-2027)	0.36%	2.14%	1.59%
<b>Total Households</b>	655	96,275	640,223
Average HH Size	1.71	3.47	3.30
<b>Annual Growth Rate</b>			
Historic (2010-2017)	1.46%	0.41%	0.66%
Projected (2017-2027)	0.46%	2.47%	3.34%
<b>Median Age</b>	51.8	29.4	32.8
0-17 years	15%	30%	28%
18-64 Years	47%	61%	61%
64 Years and Over	43%	9%	11%
<b>Jobs per Household*</b>	14.5	1.1	1.1
<b>Unemployment Rate**</b>	27.9%	9.9%	7.7%
<b>Median Household Income</b>	\$11,345	\$40,276	\$57,431

\* HR&A Advisors, Inc.

\*\*Percentage of population 16 years and over in the labor force.

Sources: Social Explorer, ACS 2015 5-year estimates, SCAG Growth Forecast 2012, SCAG TAZ Forecast 2008, Dept. of Finance E5 2007.

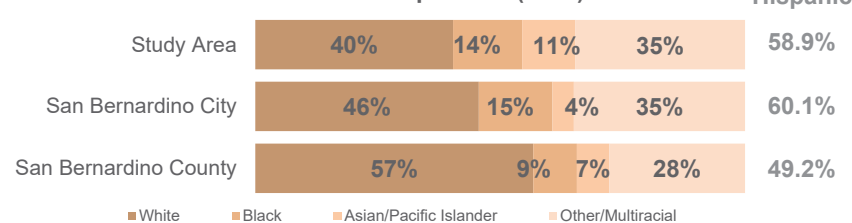
### HOUSING TENURE (2015)



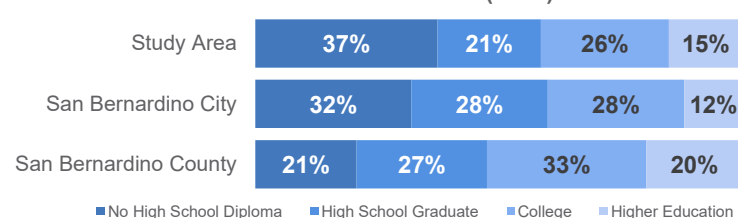
### MOBILITY (2015)

	Study Area	San Bernardino City	San Bernardino County
<b>Average Commute Time (in mins.)</b>	24	27	30
<b>Cars per Household*</b>	NA	0.6	1.1
<b>Public Transit Users</b>	3%	3%	2%
Solo Drivers	72%	75%	79%
Others	25%	22%	20%

### Racial and Ethnic Composition (2017)



### Educational Attainment (2017)



# Employment Profile

The Study Area is an important job center for the City of San Bernardino, with nearly 10 percent of County jobs. Almost 99 percent of the workers in the Study Area commute from other parts of the City and region. Average commute time for workers coming into the Study Area is about 24 minutes and only 3 percent of them are public transit users. Although the employment density in the Study Area is high, overall employment has declined in the last five years. Jobs in the City have also declined in the past five years, but it has grown in the County. SCAG growth forecasts for the City and the County anticipate nearly 4- to 4.5-percent annual growth in employment.

Employment in the Study Area is primarily driven by government jobs. Government, education- and medical-related industry clusters are the largest employer in the region as well as in the Study Area.

	Study Area	San Bernardino City	San Bernardino County
<b>EMPLOYMENT (2015)</b>			
<b>Total Worker Population</b>	9,509	105,347	685,642
<b>Job Density (per sq. mile)</b>	12,037	1,701	34
<b>Annual Growth Rate</b>			
Historic (2010-2015)	-2.1%	-0.1%	2.1%
Projected (2017-2027)	1.56%	3.9%	4.4%
<b>Average Earnings per Job*</b>	\$49,661	\$51,610	\$53,546

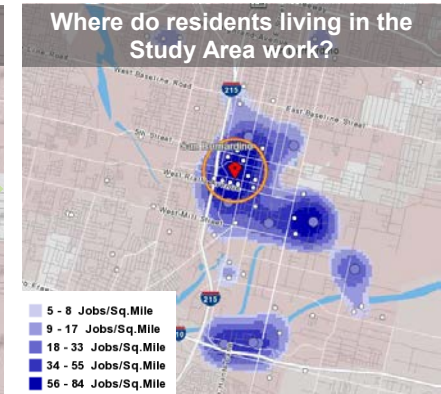
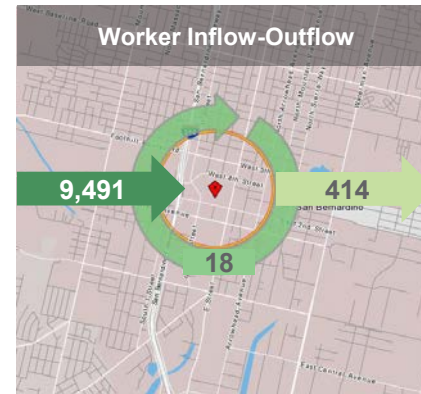
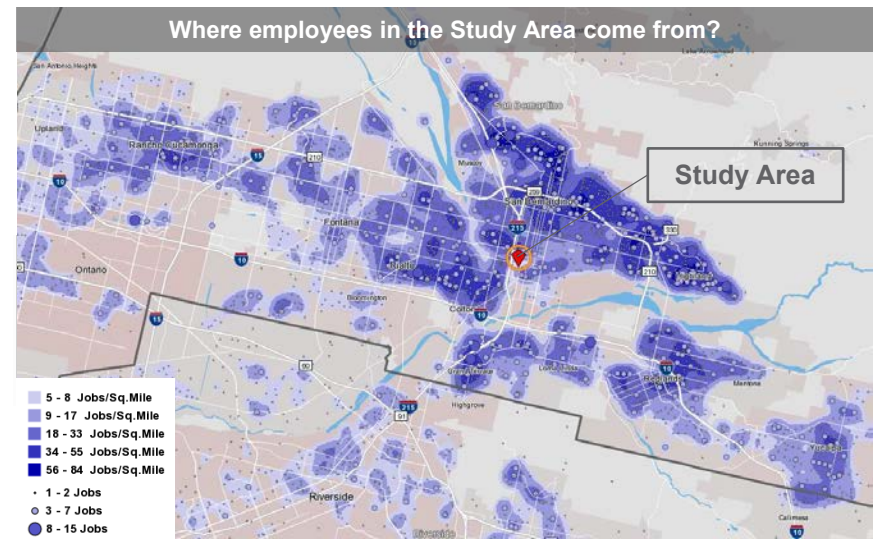
**Top Three Industry Clusters**

Government 54.5%	Government 32.1%	Education & Medical 24.7%
Education & Medical 26%	Education & Medical 27.2%	PD&R 21.9%
Knowledge-based 6.6%	PD&R 14.9%	Government 19.7%

\* Includes wages, salaries, supplements (additional employee benefits), and proprietor income. Approximated by zip code.

Sources: LEHD, Social Explorer, ACS 2015 5-year estimates, SCAG Growth Forecast 2012, SCAG TAZ Forecast 2008.

# SOCIOECONOMIC PROFILE



## Employment Industry Cluster Classification

The classification is based on Center for Transit-Oriented Development 2010 Report.

- **Natural Resources** includes agriculture and mining;
- **Production, Distribution, and Repair ("PD&R")** includes manufacturing, wholesale trade, transportation and warehousing;
- **Knowledge-based** includes information, finance and insurance, real estate, scientific, professional, and technical services, and management of companies;
- **Entertainment** includes arts, entertainment, and recreation, and accommodation and food services,
- **Government** includes utilities, administration and other services.



## Employment Trends

The Inland Empire was significantly impacted by the recession, but the economic outlook has improved. Between 2010 and 2015, the County gained 67,500 jobs. The Production, Distribution and Repair Industries (PD&R) cluster, which include logistics and manufacturing, Education and Medical cluster, and Government cluster are the three major growth opportunities in San Bernardino County.

The City of San Bernardino and Study Area have not shared equally in County growth. The City of San Bernardino lost approximately 700 net jobs between 2010 and 2015, with major losses in Education and Medical and the Other Category, but growth in PDR and Government. Government and Education and Medical are major industry clusters in the Study Area, but employment numbers in the Study Area have declined in the last five years, with the exception of government-related jobs.

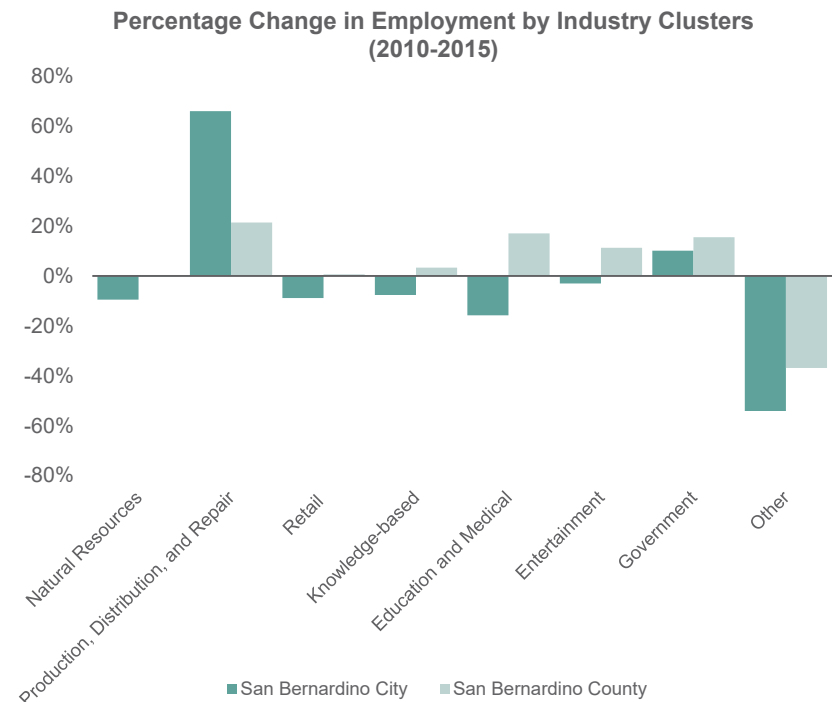
### HQTA Opportunities

- The City has prepared a draft Carousel Mall Specific Plan which corresponds with the HQTA. The main objectives of the Specific Plan is to achieve higher quality development and revitalize the public realm to enhance community assets and improve the City's image. The City will also embark on a Downtown Specific Plan, which should codify TOD principles and enable high density development within the HQTA.
- The high number of jobs in the Study Area yet high resident unemployment suggest a disconnect between the skills and education of current residents and the availability of jobs within the area. Training and educational opportunities could be of value to help current residents.
- The high jobs to households ratio, as well as the fact that 99% of area employees commute into the area, suggest the value that new transit connections will bring. The HQTA should leverage the transit and focus on attracting additional amenities to draw and locate some of the current 10,000 employees to live in the area.
- Building on the Government cluster is a clear opportunity for the HQTA. The HQTA can also leverage the transit investments to attract other services to support and complement the existing Government employment hub.
- Provide amenities and walkable neighborhoods to support vulnerable populations including a high concentration of youth and seniors who might not have easy access to personal vehicles.

## SOCIOECONOMIC PROFILE

EMPLOYMENT TRENDS	Study Area	San Bernardino City	San Bernardino County
<b>Employment Growth in Industry Clusters (2010-2015)</b>			
Natural Resources	(6)	(24)	(8)
Production, Distribution, and Repair	(305)	6,232	26,524
Retail	(28)	(802)	502
Knowledge-based	(86)	(706)	1,917
Education and Medical	(293)	(5,361)	24,656
Entertainment	(207)	(244)	7,047
Government	34	3,116	18,135
Other	(177)	(2,938)	(11,249)

Negative numbers in parenthesis



## General Plan (adopted 2005, amended 2013)

The land use element of the San Bernardino General Plan (2005) indicates the 1/2 mile radius around the Transit Center as within the Downtown Strategic Area and with most land uses designated as Regional Commercial and Commercial Office with a small portion of land indicated as Public Facilities and Industrial. The land use designations in the area allow up to 4.0 floor area ratios and residential densities up to 54 dwelling units/acre. The General Plan focuses economic potential along key corridors and in select activity centers. Quality infill development should be made a high priority in the commitment of the City's resources and available funding. There are policies to explore initiatives that promote realignment of new transit stops.

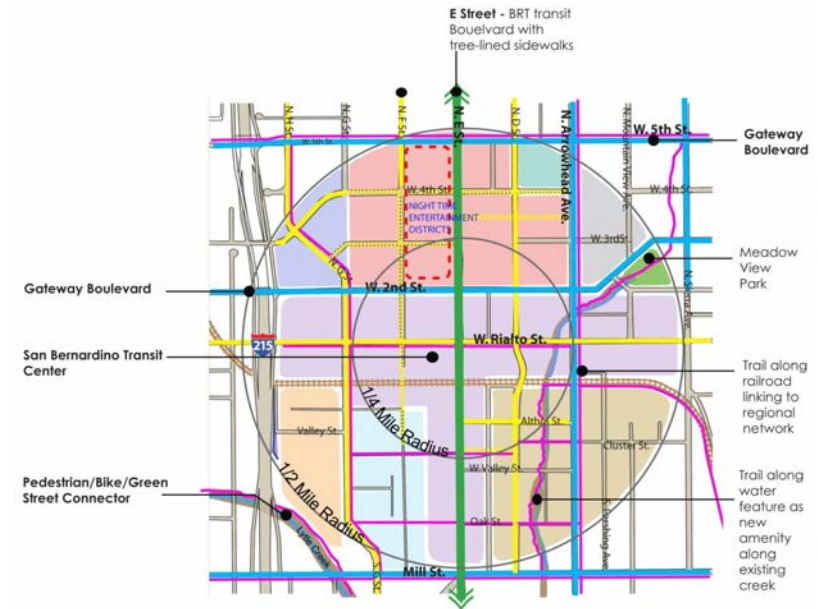
### 2013 Draft Amendment

The purpose of the 2013 amendment was to add a new designation of a Transit Overlay District (TD) Strategic Area, defined as compact, mixed-use, pedestrian and transit-oriented areas within walking distance to a transit station, to several transit stations in the City of San Bernardino including the Downtown Transit Center. The strategic areas allow for higher density, encourage greater pedestrian and bicycle infrastructure connectivity, and streetscape and infrastructure improvements along major corridors connecting to the transit stops. Goals specifically identified for the San Bernardino Transit Center TD Strategic Area are outlined below:

- **MIXED-USE TRANSIT VILLAGES: BETWEEN RIALTO AVENUE AND 2ND STREET:** The objective is to create two walkable transit-oriented sub-areas of mixed-use with small restaurants/retail, offices, and other transit-supportive uses near the Transit Center: one between Rialto Avenue and 2nd Street and along E Street south of Rialto.
- **LIVE/WORK ECO ART VILLAGE:** The Live/Work Eco Art Village sub-area objective is to provide special opportunities to create an eco and art district that can be a business incubator area for live/work opportunities with small restaurants, breweries, art studios and unique housing interspersed with business and employment opportunities connected to sustainable energy and natural systems.
- **RESIDENTIAL/SPORTS VILLAGE:** The residential/sports village centered around the Arrowhead Credit Union Baseball Park provides a district for recreational sports fields, stadiums, related uses, and high-density residential.
- **REGIONAL CAMPUS:** This Regional Campus objective is to provide opportunities for larger campus employment facilities such as a major high tech firm or medical center cluster or other large scale and high employment/customer intensity land use that has a strong transit orientation.

## PREVIOUS PLANNING EFFORTS

### Transit Center Transit District Strategic Area Map



### Land Use Sub-Areas and Linkages





## Carousel Mall Master Planning

There have been several plans and proposals to transform the vacant Carousel Mall site, which comprises the majority of the land area of the HQTAs study area, into a series of mixed-use developments. According to the City, the City of San Bernardino is moving forward with a new development and reuse plan for the Carousel Mall site. The development is expected to serve as a catalyst for Downtown San Bernardino. Concepts being considered include mixed-use developments with market-rate housing and retail development with future phases including office and additional residential. While each plan varies, all plans generally envision the site as an integrated “district” with distinctive entryways and a cohesive design.

### Major Plans and Proposals

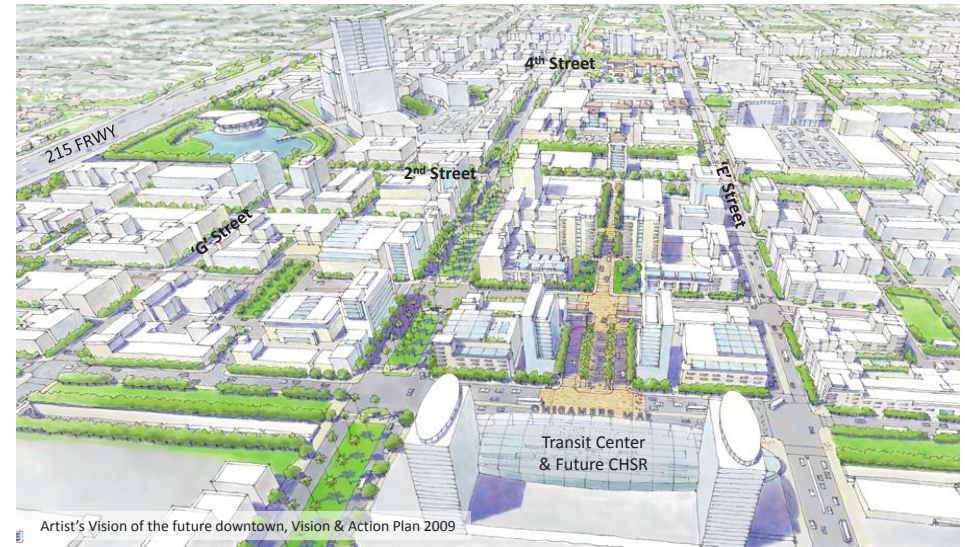
- **San Bernardino: New Downtown (2006):** This development proposal, which was never constructed, proposed a pedestrian-scale block structure of 300 feet x 300 feet. New buildings would abut property lines along major streets and would often be oriented around courts. The project was primarily mixed-use and row town house structures and preserved the JC Penny building, the Harris Building, and the Woolworth Building.
- **Downtown Vision and Action Plan (2009):** This plan was created as a road map for the future revitalization and redevelopment of the downtown area. Major proposals include the relocation of City Hall to a new civic center closer to the I-215 Freeway with greater visibility and access and for the Carousel Mall site to be reconfigured as an open-air mixed-use and retail district.
- **Carousel District Specific Plan, Draft (2017):** This plan has not been adopted. The existing mall buildings would be demolished while historic buildings, such as the Harris Building on E Street, would be preserved. In the mall’s place would be new residential, a hotel, new retail spaces, and shared parking facilities.

### Shared Objectives

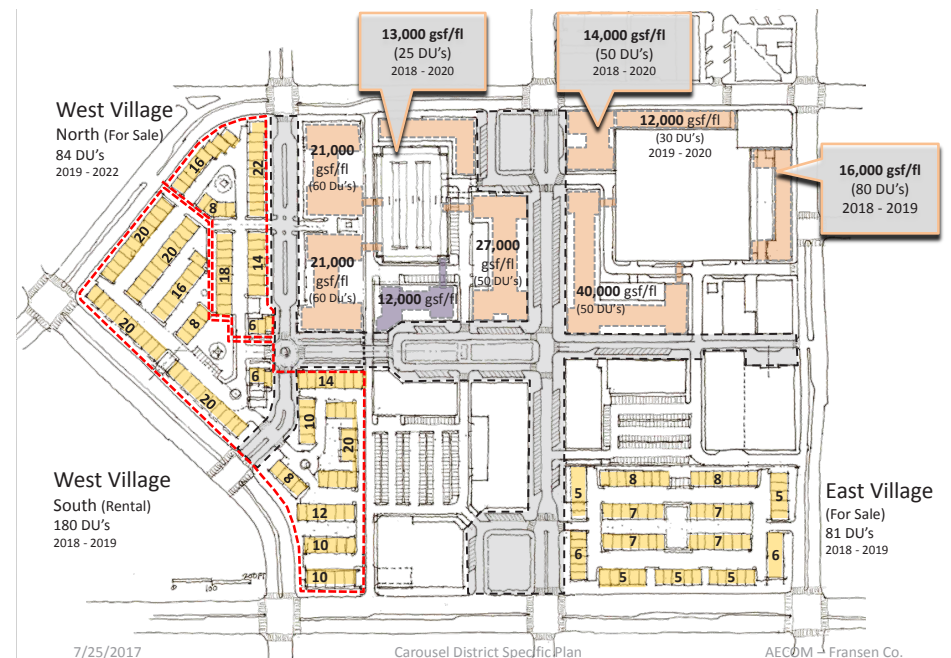
- **RE-INTRODUCE THE STREET GRID:** All plans call for street extensions of major north-south and east-west streets through the superblock.
- **ESTABLISH A SHARED PARKING STRATEGY:** Recent plans are structured to accommodate a shared parking district plan and park-once strategies with the addition of new shared parking structures and the removal of underutilized surface lots.
- **INTRODUCE MORE COMPATIBLE USES:** Some plans call for historic buildings to be preserved and re-purposed as adaptive reuse projects, and all plans suggest defunct structures would be replaced with new residential units and retail spaces.
- **ESTABLISH DESIGN GUIDELINES:** Plans each establish design guidelines for new developments to generate a cohesive downtown environment.

## PREVIOUS PLANNING EFFORTS

### Vision and Action Plan Rendering



### Draft Specific Plan Phasing Site Plan (Residential and Hotel)



## City of San Bernardino Sustainability Master Plan (2012)

The 2012 San Bernardino Sustainability Master Plan set forth a series of 36 measures to reduce the City's greenhouse gas (GHG) emissions and improve community health and economic and environmental sustainability. The plan found that addressing building energy use and transportation would account for 36% and 51% of the City's potential GHG emission reductions respectively.

### Key Objectives

- **REDUCE ANNUAL GHG EMISSIONS:** Institute a series of policies and initiatives to help reduce the City's annual GHG emissions to 15% below 2008 emission levels by 2020.
- **GENERATE A FRAMEWORK FOR COMPLIANCE:** Create a series of metrics and guidance tools to aid City staff in implementing recommended actions to reduce GHG emissions as well as comply with regional and state targets.
- **ENGAGE RESIDENTS AND BUSINESSES:** The plan called for engagement and ongoing participation with residents and businesses to maximize the community and economic benefits associated with reducing GHG emissions

### Summary of Energy Goals

- Develop residential and commercial outreach and education campaigns
- Minimize energy costs for low-income households
- Provide commercial energy audits
- Adopt a green building ordinance that exceeds title 24 standards by 15% in 2020
- Encourage the use of innovative solar technologies in residential, commercial, and warehouse uses
- Develop comprehensive renewable energy program

### Summary of Transportation/Land Use Goals

- Implement transit improvements and trip reduction measures
- Implement Pedestrian and Bicycle Improvements
- Expand Alternative Fuel Infrastructure
- Enforce Idling Ordinance
- Encourage Smart Growth
- Improve Jobs/Household Balance
- Introduce Smart Bus Rapid Transit

## PREVIOUS PLANNING EFFORTS

### SMP Measure Quantified Reductions and Timescale

Energy Measures	GHG Reduction MT CO <sub>2</sub> e/Year	Timescale
<b>Energy-1: Energy Efficiency for Existing Buildings</b>	<b>10,276</b>	
E-1.1 Develop and implement residential outreach and education campaigns		Short term/Ongoing
E-1.2 Expand participation in home energy audits		Ongoing/Long term
E-1.3 Develop residential low-interest energy retrofit and renewable energy financing		Long term
E-1.4 Minimize energy costs for low-income households		Short term
E-1.5 Develop commercial outreach and education campaigns		Medium term
E-1.6 Provide commercial energy audits		Short term
E-1.7 Develop low-interest energy retrofit and renewable energy financing		Long term
E-1.8 Accelerate "smart meter" integration		Short term
E-1.9 Municipal energy efficiency improvements		Medium term
<b>Energy-3: Green Building Ordinance</b>	<b>0</b>	
E-3.1 Energy efficient new construction incentive program		Medium term
<b>Energy-4: Solar Installation for New Housing</b>	<b>301</b>	
E-4.1 Energy efficient new construction incentive program		Long term
<b>Energy-5: Solar Installation for New Commercial</b>	<b>1,087</b>	
E-5.1 Energy efficient new construction incentive program		Short term
<b>Energy-6: Solar Energy for Warehouse Space</b>	<b>1,785</b>	
E-6.1 Energy efficient new construction incentive program		Medium term
<b>Energy-7 &amp; 8: Solar Installation for Existing Housing and Commercial/Industrial</b>	<b>3,087 (homes) 1,128 (com/ind)</b>	
E-7/8.1 Develop comprehensive renewable energy program		Medium term
E-7/8.2 Develop low-interest financing for renewables		Medium term
E-7/8.3 Facilitate installation in low-income homes		Medium term
<b>Wastewater-2 (BE) – Equipment Upgrades</b>	<b>2,430</b>	
WW-2.1 Improve Efficiency of Wastewater Facilities		See water and wastewater
<b>Water-2 (BE) - Renovate Existing Buildings</b>	<b>8,265</b>	
W-2.1 Improve Indoor Water Efficiency		See water and wastewater
<b>Building Energy Sector Subtotal</b>	<b>28,508</b>	
<b>Transportation Measures</b>		
<b>Transportation 1: Sustainable Communities Strategy</b>	<b>7,813</b>	
T-1.1 Implement Transit Improvements		Medium term
T-1.2 Implement Transit Improvements		Short and Medium Term
T-1.3 Implement Pedestrian and Bicycle Network		Short and Medium Term
T-1.4 Facilitate Safe Routes to School		Medium term
T-1.5 Expand Alternative Fuel Infrastructure		Medium term
T-1.6 Enforce Idling Ordinance		Medium term
T-1.7 Encourage Smart Growth		Medium term
T-1.8 Improve Jobs/Housing Balance		Long term
T-1.9 Traffic Calming		Medium term
<b>Transportation 2: Smart Bus Technologies</b>	<b>436</b>	
T-2.1 Facilitate Smart Bus Rapid Transit		Medium term
<b>Transportation Sector Subtotal</b>	<b>8,249</b>	



## San Bernardino County Non-Motorized Transportation Plan (rev. 2015)

## PREVIOUS PLANNING EFFORTS

The 2011 San Bernardino County Non-Motorized Transportation Plan, revised in 2015, aims to create a safe, interconnected cycling and walking system for the entire county. The plan expands on a previous effort of the same name released in 2001 and revised in 2006. It generated a comprehensive overview of existing bicycle facilities in the county and proposed additional routes and facilities to service gap areas. The plan proposes an additional 79.4 miles of Class I and II facilities and 0.91 miles of Class III bike routes for the City of San Bernardino.

### Goals

- **INCREASED BICYCLE AND PEDESTRIAN ACCESS:** Expand bicycle and pedestrian facilities and access within and between neighborhoods, to employment centers, shopping areas, schools, and recreational sites.
- **INCREASED TRAVEL BY CYCLING AND WALKING:** Make cycling and walking an integral part of daily life in San Bernardino County, particularly (for bicycle) for trips of less than five miles, by implementing and maintaining a bikeway network, providing end-of-trip facilities, improving bicycle/transit integration, encouraging bicycle use, and making bicycling safer and more convenient.
- **ROUTINE ACCOMMODATION IN TRANSPORTATION AND LAND USE PLANNING:** Routinely consider cyclists and pedestrians in the planning and design of land development, roadway, transit, and other transportation facilities, as appropriate to the context of each facility and its surroundings.
- **IMPROVED BICYCLE AND PEDESTRIAN SAFETY:** Encourage local and statewide policies and practices that improve bicycle and pedestrian safety.

### Proposed Interventions for the City of San Bernardino

- First Priority improvements:
  - G Street: Class II bike lanes from Inland Center Drive to Rialto Avenue
  - Rialto Avenue: Class II bike lanes from G Street to E Street
- Second Priority Improvements:
  - Santa Ana River Trail extension from Waterman Avenue to Mountain View Avenue

### Bicycle Facilities



Faded symbols indicate paths that are not in this jurisdiction.

## Development Code - Update (2016)

At the time of the development of this Vision Plan, the City of San Bernardino is updating its Citywide Development Code.

Some selected permitted uses from the Draft Land Use Matrix (updated August 2016) within the Downtown Zoning District, which the study area is within and may be appropriate for the HQTAs area, are shown in the tables at right.

The former Community Development Director of the City of San Bernardino indicated that the code would be consolidated with fewer classifications and that more residential and mixed-use developments would be permitted in the downtown area.

### Goals for the Downtown Zone

- General pride and confidence in the downtown area
- Create an attractive environment which is active throughout the day and evening
- Maintain a consistently high level of design quality
- Encourage pedestrian activity by creating a positive pedestrian experience
- Protect property values through quality control

## PREVIOUS PLANNING EFFORTS

Use	Permit Required
<b>Open Space / Recreation</b>	
Community Center	C
Community Garden	A
Nature / Visitor Center	P
Parks and Playground	P
Indoor Recreation Facility	P
Theatre / Meeting Facility	C
<b>Residential</b>	
Caretaker Unit	A
Congregate Living Facility	C
Dwelling - Multiple Unit	P
Emergency Shelter	C
Home Occupation	H
Lodging - Short Stay	C
Senior Housing Facility	C
Single-Room Occupancy (SRO) Facility	C
<b>Institutional</b>	
Lodge / Meeting Hall	P
Government Service	P
Museum	P
Religious Facility	C
Resource / Tutoring Center	P
School (K - 12)	C
School (Post Secondary)	P
<b>Commercial - Retail</b>	
Alcoholic Beverage Sales (Off-Site Consumption)	C
Alcoholic Beverage Sales (Off-Site Consumption)	A
Bar / Nightclub	C
Consumer Goods - Automotive	A / C

Use	Permit Required
<b>Commercial - Retail (ctd.)</b>	
Multiple Vendor Goods	P
On-Site Production Goods	P
Retail Sales	P
Eating Establishment	P
Fueling Station	C
Open Air Market	C
<b>Commercial - Service</b>	
ATM	A
Broadcasting Studio	P
Contractor Office	P
Day Care	P
Equipment Rental	P
Financial Service	P
Fitness / Wellness	P
Media Production	P
Medical Facility	P
Office	P
Personal Service	P
Personal Service (Restricted)	A
Social Service Facility	C
Vehicle Leasing / Rental	P
<b>Industrial</b>	
Alcoholic Beverage	P / C
Manufacturing	
Research and Development	P
<b>Other</b>	
Mixed-Use Development	P

P - Permitted  
 A - Administrative Permit  
 C - Conditional Use Permit  
 H - Home Occupation Permit  
 T - Temporary Use Permit

## Theater District Development Design Guidelines (2016)

The Theater District Development Design Guidelines outline two potential build-out scenarios for the block north of the Carousel Mall Site which includes the historic theater and the relatively new Regal Cinemas as well as some retail. The primary distinction between the two options is the treatment of existing retail spaces that line the front of the Regal Cinema. The City has released a proposal to developers to execute the guidelines.

### Option 1: Re-Develop Inline Shell Space and Pad Development

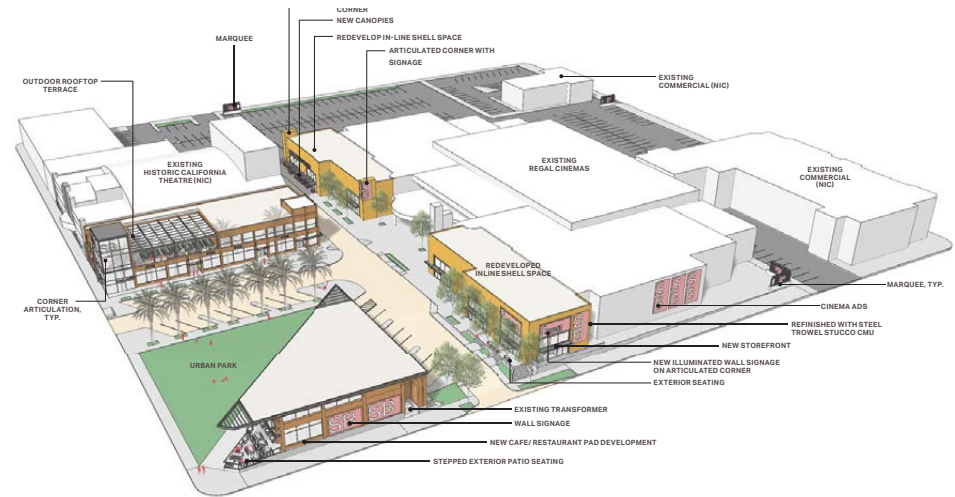
- **INLINE SHELL SPACE:** Option 1 includes minimal store front insertions and a reconfiguration of the existing retail space.
- **THEATER ADJACENT PAD DEVELOPMENT:** A new 2-story building is proposed with articulated corners and signage. A terraced rooftop is proposed for this building to as green space and a somewhat private recreational area.
- **URBAN PARK ADJACENT PAD DEVELOPMENT:** A single story restaurant/cafe is proposed with terraced seating along urban park.
- **URBAN PARK:** A small urban park is to be added at the corner of 4th Street and E Street.

### Option 2: Re-Develop Inline Shell Space and Pad Development

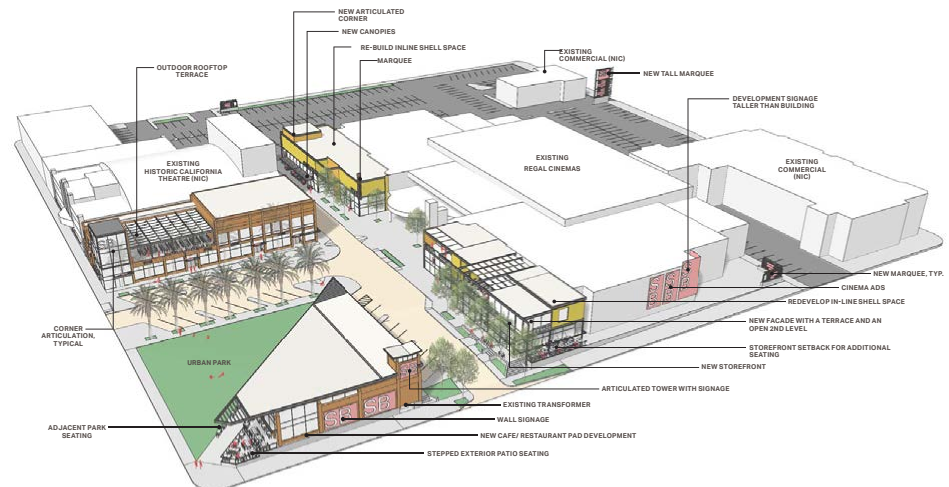
- **INLINE SHELL SPACE:** Option 2 completely rebuilds the inline shell space. Another 2-story building with a roof terrace is proposed. Both options encourage outdoor dining amenities.
- **THEATER ADJACENT PAD DEVELOPMENT:** Option 2 is identical to Option 1.
- **URBAN PARK ADJACENT PAD DEVELOPMENT:** Option 2 is identical to Option 1.
- **URBAN PARK:** Option 2 is identical to Option 1.

## PREVIOUS PLANNING EFFORTS

### Option 1



### Option 2





# Part 3

## Outreach

The opportunities and constraints are viewed through the lens of High Quality Transit Areas and the principles of transit-oriented communities.

**Stakeholder Interviews**  
**Kick-off Meeting**



## HQTA Kick-off Meeting - 3/13/2018

## STAKEHOLDER INTERVIEWS

A kickoff meeting was held for the SCAG HQTA Pilot Project within the City of San Bernardino. The purpose of this meeting was to bring together City of San Bernardino, Omnitrans, SBCTA, SCAG, and the consultant team to discuss coordination and direction of the project. The meeting consisted of introductory comments from the City of San Bernardino and SCAG followed by a presentation by the consultant team to facilitate discussion of multiple topics. Topics of discussion included project goals, the vision plan process and work plan, stakeholder/community outreach, project area, existing conditions, data requests, and the schedule. The following is a summary of the main discussion items.

### Introductory Remarks and Overall Goals

- SCAG:
  - This project represents the next generation of development around transit stations (21st Century development)
  - Reduced car use, net-zero development, new technologies, urban and walkable neighborhoods
  - Environmental and sustainability improvements through green infrastructure
  - What funding sources can be pursued based on visioning process
  - Pilot projects will be featured as models in the next Regional Transportation Plan / Sustainable Community Strategy (RTP/SCS)
- San Bernardino Planning
  - Development code update
    - Approximately 60% complete; estimated completion in July 2018
    - Includes environmental documentation - working with environmental team to develop project description; description should be available next week
    - Send project description to Gruen
    - Include densities and FAR for Downtown
    - Removing minimum parking requirements in Downtown (no parking maximums)
    - Will allow residential in Downtown
    - Expected to be completed for City Council hearings in July
  - Transit District (TD) Overlay
    - ½ mile area from Transit Center
    - Keeps underlying zoning in place
    - Study area (Carousel Mall) zoned as commercial, which does not allow for residential
    - Future planning will keep the TD overlay boundaries in place, underlying uses will change
  - Main Street Overlay
    - To be removed

- General Plan
  - Last completed in 2005 – missing many of the elements expected for a General Plan developed today (bicycle and pedestrian focus, etc.)
  - Potential for General Plan update
    - Would include update of focus area for Downtown
    - If funding not made available for citywide General Plan update, a new Specific Plan for Downtown to be developed
- Draft Downtown Specific Plan
  - Draft Downtown Specific Plan developed with AECOM no longer valid
  - Reconnecting the street grid and adding residential component to Downtown are the only elements to be carried forward from the Downtown Specific Plan

### HQTA Project Area

- Downtown boundaries:
  - East to Arrowhead
  - North to 8th Street
  - West to I-215
  - South to Mill Street
- Study Area:
  - Add sites between Transit Center and San Manuel Stadium to project study area
  - Will start with a broader focus considering Downtown boundary when considering opportunities, constraints, vision, etc.
    - Vision plan will narrow and provide recommendations for identified sites (and sites to be added between Transit Center and San Manuel Stadium)

### Carousel Mall

- Potential for development RFQ/RFP for Carousel Mall site to be released in August / September
- City of San Bernardino views E Street edge of Carousel Mall site as first development opportunity to serve as catalyst project; current draft plans show townhouse development

### San Manuel Stadium

- Stadium owned by City of San Bernardino (does not own parking lots)
- Property north of stadium south of rail tracks owned by various public agencies
- Property west of stadium under private ownership
- Expectation of City that potential residents would find this location desirable
- TOD originally envisioned on both north and south sides of rail tracks, with connection via a pedestrian bridge; add this site to study area

## HQTA Kick-off Meeting - 3/13/2018 cont.

## STAKEHOLDER INTERVIEWS

### Seismic Considerations

- City Hall has been vacated due to seismic concerns
- City planning to complete study to determine seismic condition and retrofit of City Hall
- City views City Hall as important architectural asset to be retained
- City plans on completing study to determine seismic condition and potential retrofit of Carousel Mall parking structure
- Study will determine feasibility of keeping or demolishing parking structure

### Street Trees and Open Space

- Citywide inventory of trees completed by West Coast Arborist; city to provide
- Many existing street trees throughout the city, including downtown, have died (approximately 600)
  - City Council to decide on future strategy (removal, removal and replace, etc.)
- Urban Greening and Tree planting grants available from SCAG and State of California
- Meadowbrook Park contains hot spring – utilized by homeless population
  - Desire by City to improve quality of park space
- Convention Center is vacant
- Opportunity for open space at City Hall Plaza / Court Street Square area around City Hall
- Food truck event has been discontinued due to declining attendance; was successful for about 18 months when first introduced
- Park Strategic Plan
  - Focus on improving existing parks
  - Unknown timeline for beginning plan

### Transit

- sbX ridership has increased since the Metrolink extension to Transit Center in December 2018
- sbX weekend service to be introduced January 2019
  - 20 minute frequencies on Saturday, 7am – 8pm
  - Route 2 frequencies will be reduced
- No services changes planned
  - Potential for minor rerouting of some routes
- Omnitrans currently working on short-range plan

### Bicycle

- No existing citywide bicycle plans or vision
- SCAG ATP awarded in December (\$ 200k)
  - Will be used to develop citywide bicycle master plan (65 square miles) - June start
  - Working with Cal State LA

- Desire to improve east-west bicycle connections but they are difficult to do due to ROW deficiencies, existing street parking and truck routes
- G/H Streets viewed as primary candidate as bicycle corridor and cycle track
- Bicycle facilities can be prioritized on new street connections through Carousel Mall site

### Traffic / Truck Routes / Streets / Collisions

- Updated traffic volumes to be completed with General Plan update
- Traffic circle to be introduced at 4th and Mountainview
- D Street to be cul-da-sacked at rail corridor – also closed to pedestrian crossing
- No current designated truck routes – City prohibits trucks on certain streets
  - General Plan updated expectation to indicate specific truck routes
- Streets heavily utilized by trucks
  - 5th
  - Rialto
  - Waterman
  - Tippecanoe
  - Mill
- Vehicle – Pedestrian Collisions
  - Senior housing concentrated along 5th and probably contributes to higher concentration of crashes along 5th
- 3rd Street could go through the Carousel Mall site if addition to Harris Building was demolished
- 3rd Street terminates west of Freeway

### Parking

- City owns multiple surface parking lots throughout downtown
  - Utilization unknown
  - Multiple old leases of parking lots
- City plans to complete DT parking study (2019)
- City plans to retrofit and keep structure in Civic Center
- Some Inland Empire projects that do not have any on-site parking are successful (Arteco)

### Development Opportunities

- Carousel Mall
  - City planning on selling Theater Square site and using proceeds to fund demolition of Carousel Mall – working on agreement with County to keep all sale proceeds
  - Inland Center Mall doing very well and adding new tenants
  - City envisions major developer for Carousel Mall site
    - May only be master developer and complete entitlements and sell off most of



## HQTA Kick-off Meeting - 3/13/2018 cont.

## STAKEHOLDER INTERVIEWS

- site to builder developers
- KB Homes very interested in developing residential on site
  - Development from KB on-hold until RFQ released for full site
- 2nd / 4th / E Streets most appropriate for vertical mixed-use developments with ground floor retail
- City envisions predominately housing and some retail/office
- Harris Building
  - Building sold to a company in Spain (El Corte Ingles)
- Anderson Building
  - Recently sold to developer
  - REA prohibiting residential expires in 2021
  - Developer also looking to purchase Woolworth Building (4th and E)
- Downtown Hotel
  - Owned by Bahrain royal family
  - Represented by local law firm but have been unresponsive
- 5th / G / H Streets Development
  - RFQ released (9 respondents narrowed to 3)
  - Expectation is site can support type V development and surface parking
- Coordinate further with Economic and Housing Development Director Kathy Brann
- Residential needs to fill in the gaps and infill and reposition retail; potential to capture students
- City has not recovered since the Great Recession; region will add more jobs but many may be transportation/warehouse jobs

# Part 4

## Opportunities and Constraints Analysis

The opportunities and constraints are viewed through the lens of High Quality Transit Areas and the principles of transit-oriented communities.

**Mobility**

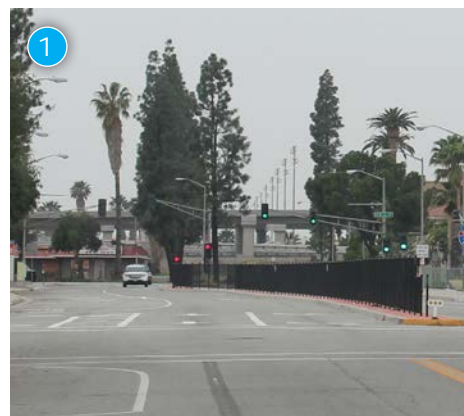
**Land Use**

**Urban Design**

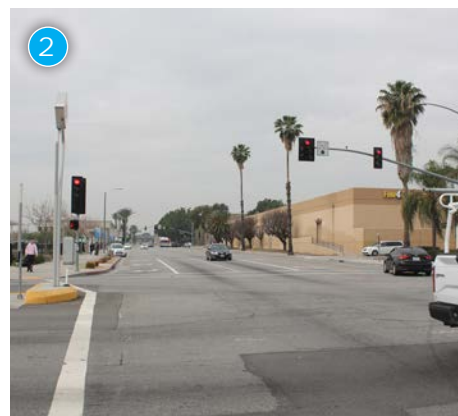


# Constraints

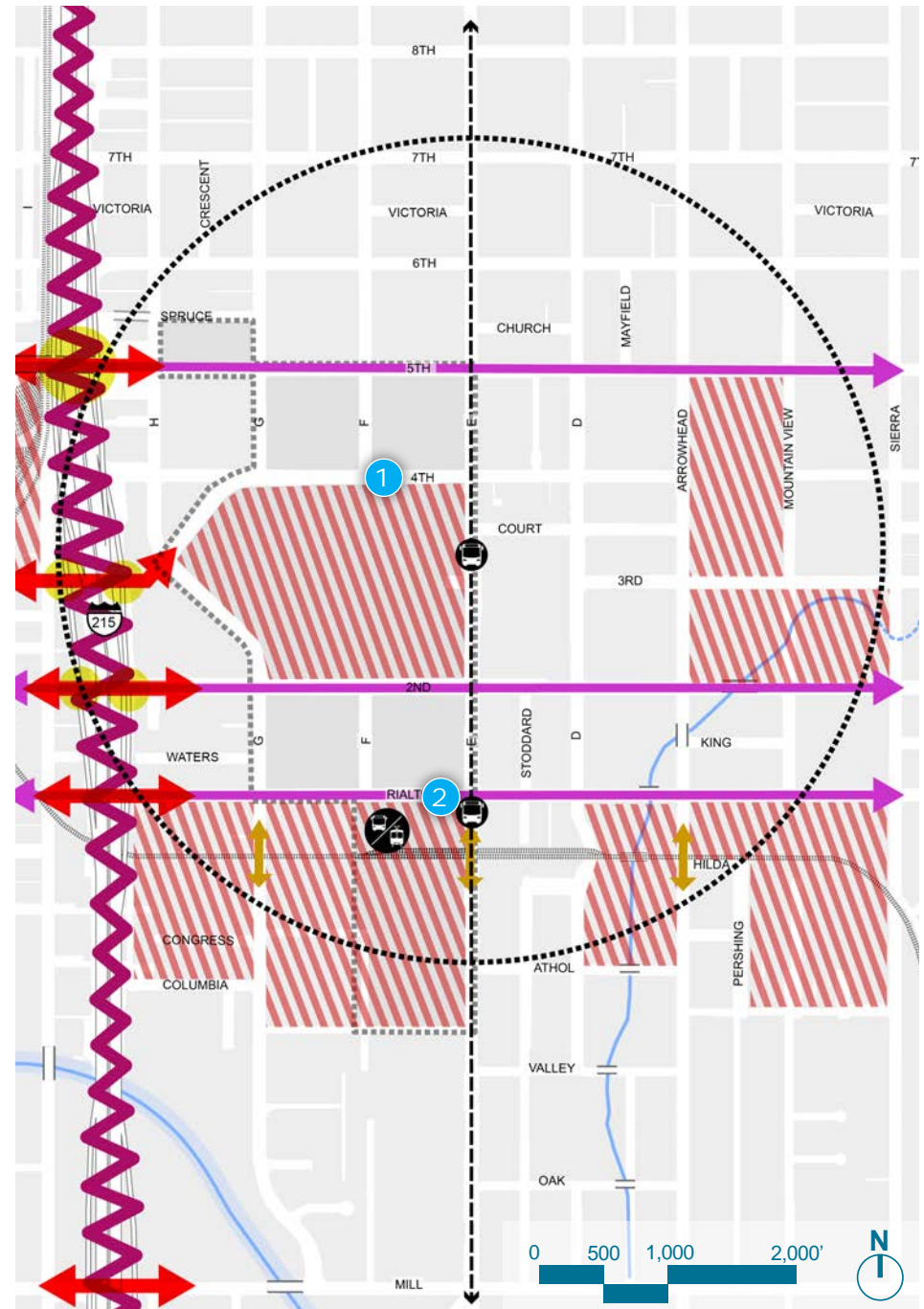
- W I-215:** I-215 is among the most significant physical features in Downtown San Bernardino. While it provides for the movement of vehicles through the city, it produces significant negative impacts for local residents and workers including air pollution and noise pollution. It is also a barrier to accessing downtown from west.
- I-215 Access:** Traffic congestion at on/off-ramps. Hazardous for bicyclists and pedestrians as drivers are unaware, focused on accessing highway, and/or in a rush. Poor visibility for pedestrians and bicyclists due to highway over crossings.
- Vehicle-oriented Corridors:** Barriers to cross (physical and psychological), as well as unpleasant for pedestrians and bicycles to travel along. While they may have among highest traffic volumes in Downtown, they are also over-designed based on recorded and observed traffic volumes. Vehicle corridors mostly travel east-west and correspond with I-215 access (except Rialto Avenue).
- Limited Connectivity Across Rail Corridor:** D Street is planned to be reconfigured with a cul-da-sac on the north and south sides of the rail corridor, closing access to vehicle and pedestrians. Remaining rail crossings for vehicles and pedestrians occur at-grade at G Street, E Street, and Arrowhead Avenue.
- Limited Connectivity Across I-215:** Street crossings occur at 3rd Street, 2nd Street, and Rialto Avenue. I-215 crossing at 5th Street occurs via bridge.
- Superblock:** Blocks that are over 300 feet long in at least one dimension are not pedestrian friendly, as it often takes much longer for pedestrians to reach their destination on-foot.



View of the I-215 from 4th Street










View of the streetscape along the Rialto superblock





# Opportunities

-  **Street Grid:** Reintroduce grid through Carousel Mall site. New street grid should be thought of as an opportunity to reduce facilities designed for vehicles city-wide. F Street provides an excellent opportunity to connect future Carousel Mall site redevelopment to the Transit Center.
-  **sbX:** sbX bus rapid transit corridor connects major activity centers in San Bernardino and Loma Linda to the recently completed Transit Center.
-  **New Gateway Intersection:** Potential for new intersection configuration depending upon new street grid through Carousel Mall. The new intersection should provide a gateway into Downtown San Bernardino and prioritize traffic calming.
-  **Connected Bicycle Network:** Class II bicycle lanes identified in County Non-Motorized Master Plan: G/H, Rialto, Arrowhead, and Mountain View. Consideration should be given to upgrading standard bicycle lanes to protected bicycle lanes. New streets should include protected bicycle facilities. Consideration should be given for protected intersections where bicycle routes intersect.
-  **Bicycle and Pedestrian Bridge Crossing:** TOD has been planned at the Transit Center site (Rialto and E) as well as on vacant land between the rail corridor and San Manuel Stadium along E Street with a pedestrian bridge linking the two developments across the rail corridor.
-  **Rail Corridor Pedestrian Crossing:** D Street is planned to be reconfigured with a cul-de-sac on the north and south sides of the rail corridor. Pedestrian access across the rail corridor should be preserved.
-  **Green Corridors:** There are many waterways within the City of San Bernardino, including Meadowbrook and Lytle Creeks, which ultimately connect to the Santa Ana River south of Downtown. There is opportunity to transform these corridors into pedestrian and bicycle parkways as part of a connected citywide parkway system.

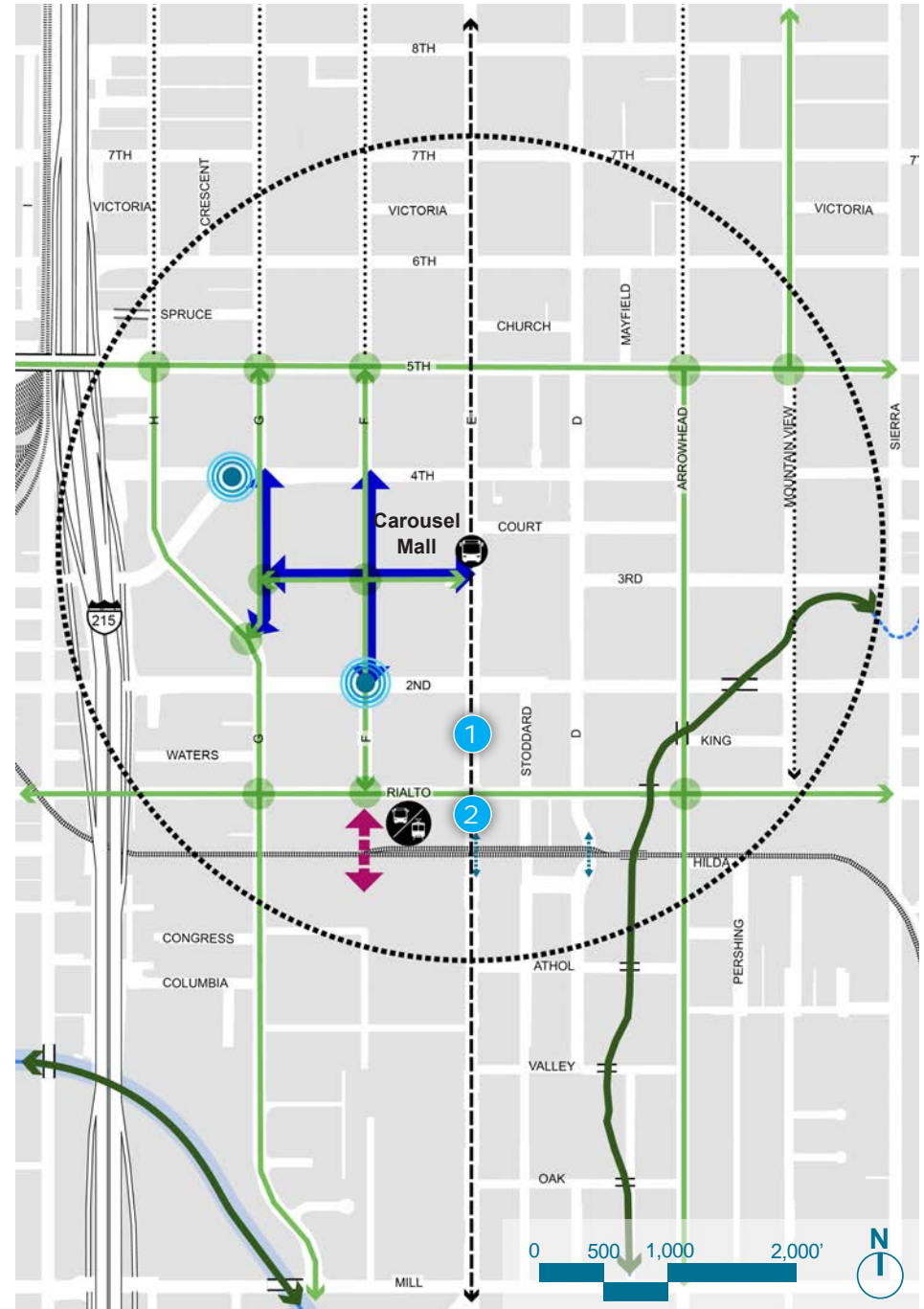


View of the multi-modal usage of E Street



View of the sbX stop at the E/Rialto intersection

# MOBILITY



## Opportunities - Carousel Mall Street Grid + Open Space

A new street network within the Carousel Mall will affect the existing network, regardless of design; it should be designed as a catalyst for improving the city-wide public realm for people and the environment. Specific objectives of this study: to reduce VMT, GHG emissions, traffic collisions, and others would be accomplished through a new street network designed for low speeds and volumes that prioritize bicycle and pedestrian facilities. Additionally, the street network should support a new open space network, that integrates public space and circulation. Specific design considerations for three potential alternatives, including protected bicycle lanes on all streets for primary alternatives, are summarized below:

### Alternative 1

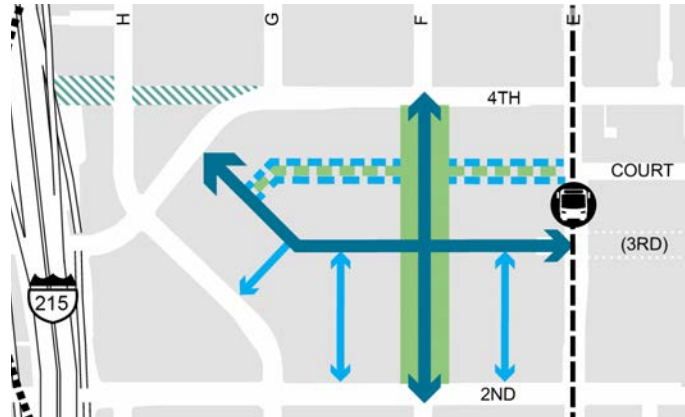
- Extend F through the site as the primary street; realign W. 3rd Street to intersect with G and 4th Street; continue shift in street grid (3rd Street) into the site; close 4th Street west of G Street
- Large public space with passive and active uses and significant urban greening at northwest corner of site - approximately 7 acres typical of a important neighborhood park like Washington Square Park (New York City) or Parque Espana (Mexico City)
- Creates grand visual termini and significant land uses at each end of Court Street

### Alternative 2

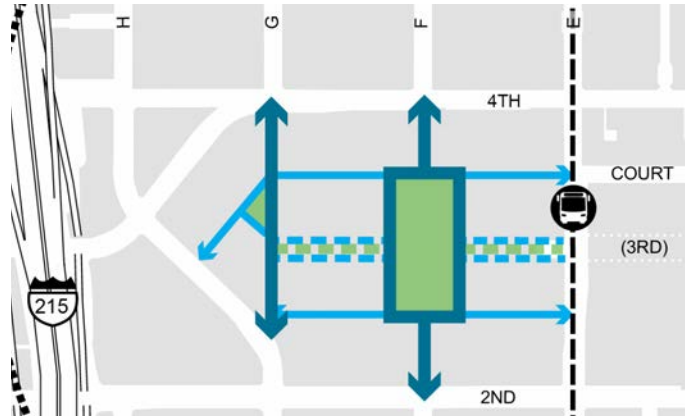
- Take advantage of existing topography to establish central park in center of the site where depressed
- Extend G Street through site as primary street; reconfigure W 3rd Street and H Street to be secondary streets; realign W. 3rd Street to create new intersection west of G Street
- Extend F Street through site, but circulate around central park

### Alternative 3

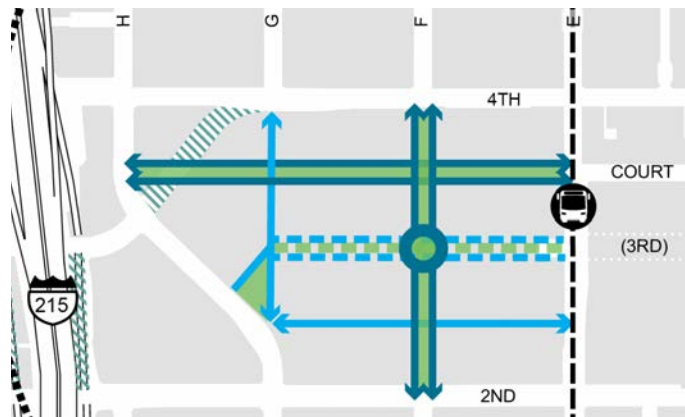
- Realign W. 3rd Street to intersect with G Street; continue shift in street grid (3rd Street) into the site with parallel linear parkway connection between H Street and F/4th Street Intersection
- Establish network of traffic circles and open spaces (parkways) where street grid shifts from N-S to diagonal
- Preserves existing Carousel Mall parking structure in short-term - expand park network in long-term



Alternative 1



Alternative 2



Alternative 3



Parque España; Mexico City, Mexico



Franklin Square; Savannah, GA



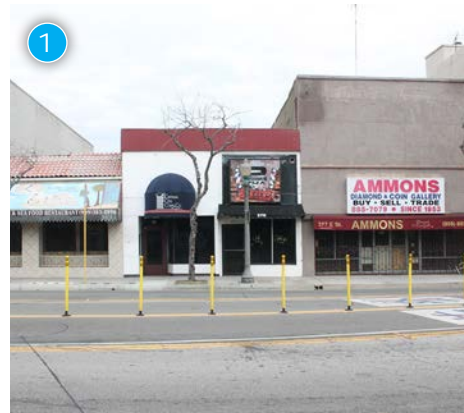
Gates Circle / Chapin Parkway; Buffalo, NY



# Constraints

# LAND USE

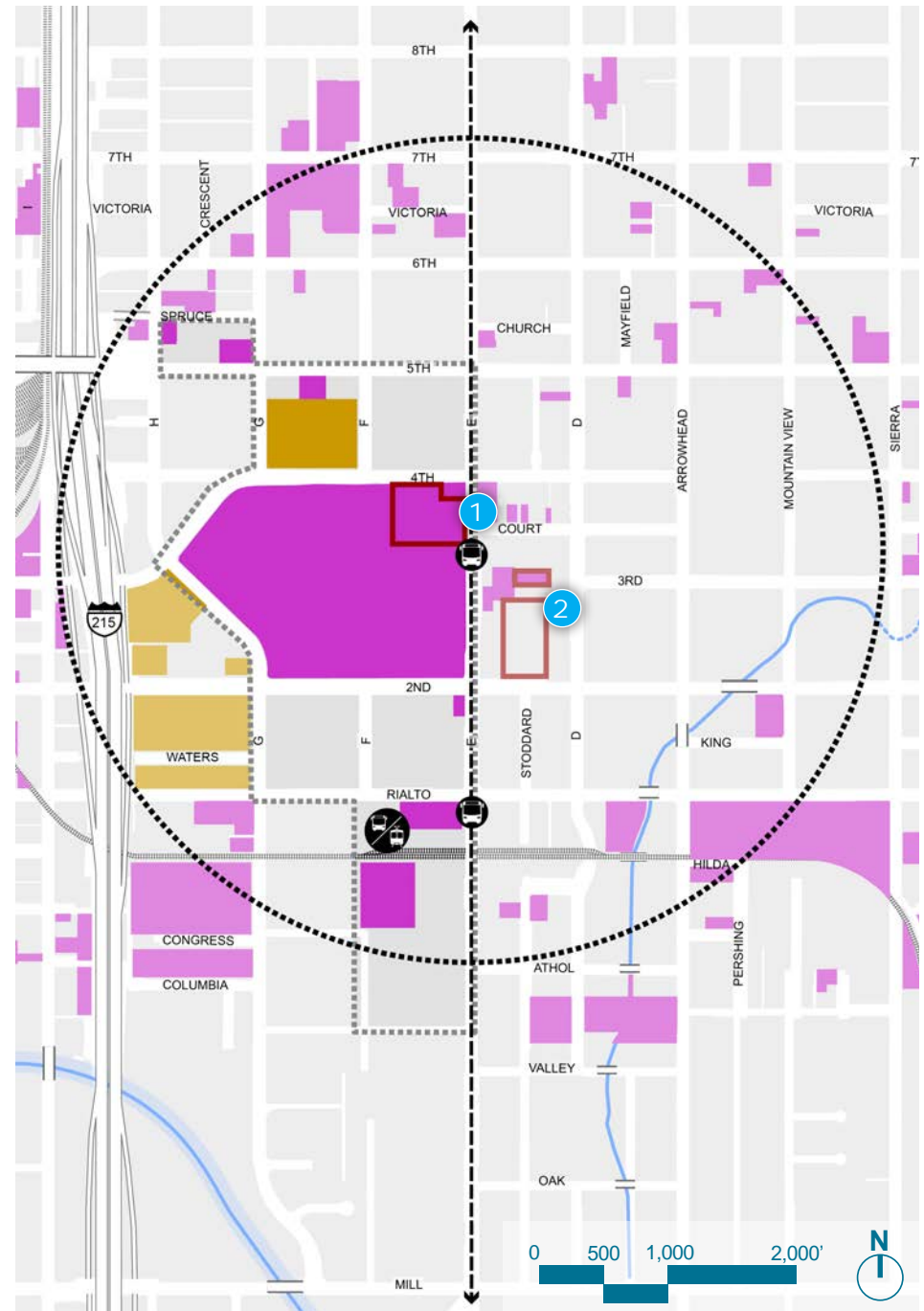
- Vacant:** In addition to the Carousel Mall site, there are many vacant parcels and buildings spread throughout Downtown San Bernardino. These sites include vacant buildings appropriate for adaptive reuse, vacant buildings that can be demolished for new development, and vacant land.
- Seismic Condition:** Existing buildings that may not meet modern seismic safety standards. Studies will need to be completed for City Hall, City Hall parking structure, and Carousel Mall parking structure to determine condition of structures and potential seismic retrofit options.
- Non-complementary Uses:** Active businesses that generate jobs and activity in the short-term, but may not have employment densities or uses most appropriate for a transit-oriented community in the long-term. These sites could become a constraint in the long-term after other infill redevelopment has been completed on neighboring parcels as non-complementary uses take up a considerable amount of prime land in the downtown. These sites include big box retail centers, retail strip plazas, and car dealerships.



View of existing retail along E Street









View of the San Bernardino City Hall





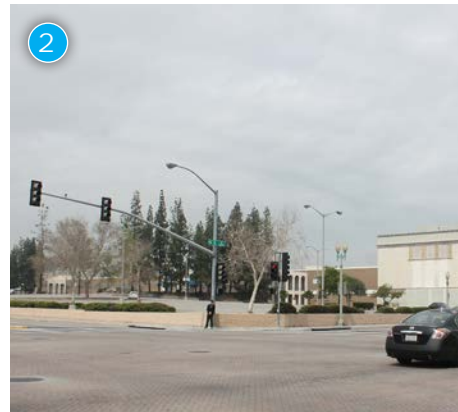
# Opportunities

## LAND USE

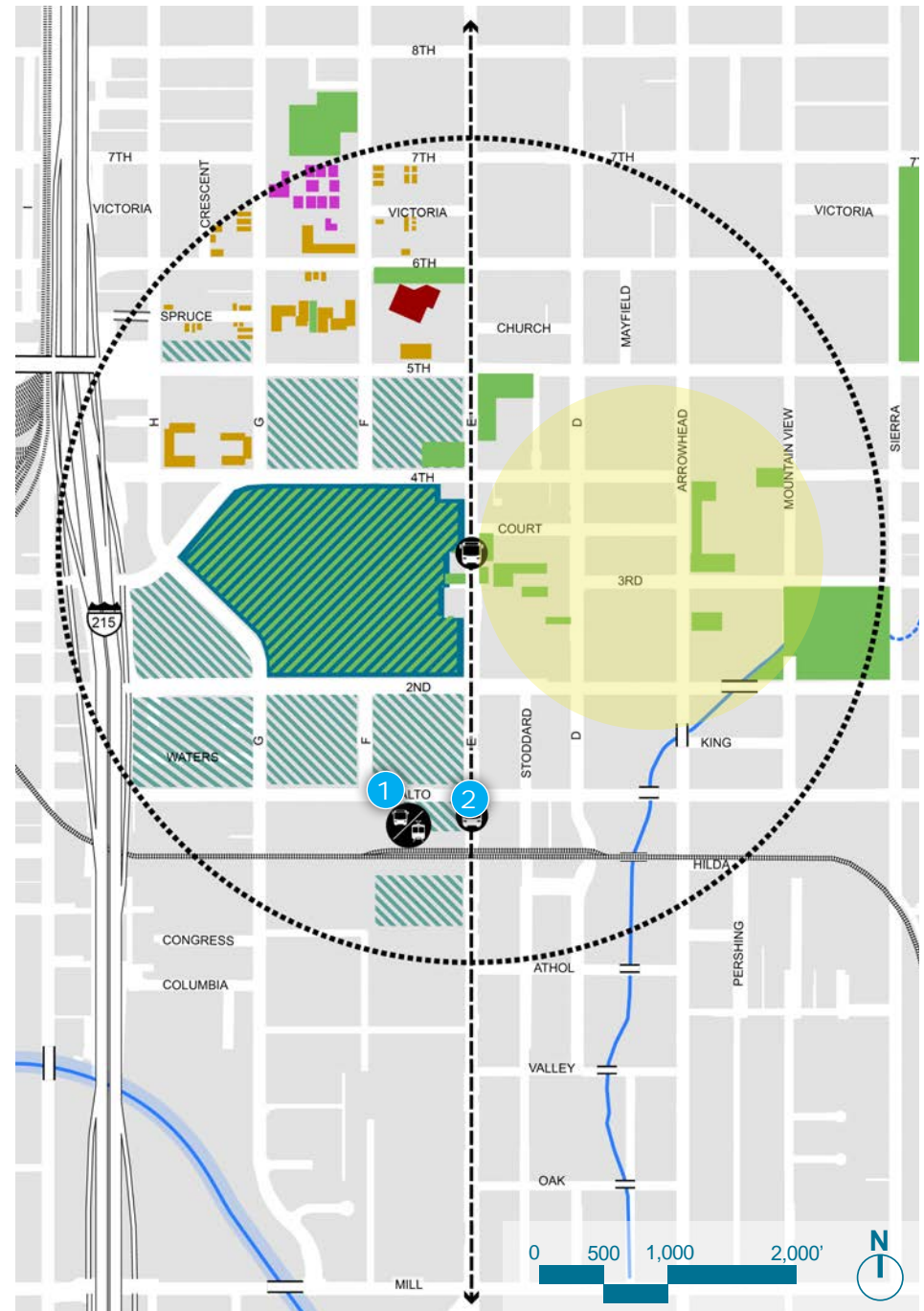
-  **Major Redevelopment Opportunities:** Large vacant land properties and publicly-owned properties that are suitable in size and location for a catalytic project.
-  **Carousel Mall:** The mall site is large enough to become a catalytic new development and could add a substantial amount of centralized open space for the downtown area.
-  **Park / Open Space:** Existing parks provide neighborhood anchors and could be elevated in importance and use. There are a number of smaller existing plazas and open spaces throughout Downtown San Bernardino, which could be better connected through parkways and wayfinding. The Carousel Mall site provides an opportunity for a central open space (potentially more unique programming than what currently exists) and smaller open spaces.
-  **Existing Residential:** There are opportunities for infill residential development on blocks with existing residential uses. Existing residential areas to the north of the Carousel Mall site consist of a mix of housing from senior, multi-family, and single-family. New development should provide a transition between more commercial uses in Downtown and existing residential areas to develop a cohesive and continuous urban fabric within Downtown.
-  **Neighborhood Services:** Churches, schools, civic institutions, local shops and markets, and other organizations that increase the social capital of the neighborhood. Preserve existing neighborhood-serving uses.
-  **Employment Center:** There is a large concentration of government employers and investments in new structures just east of the study area.



View of the San Bernardino Downtown Transit Center



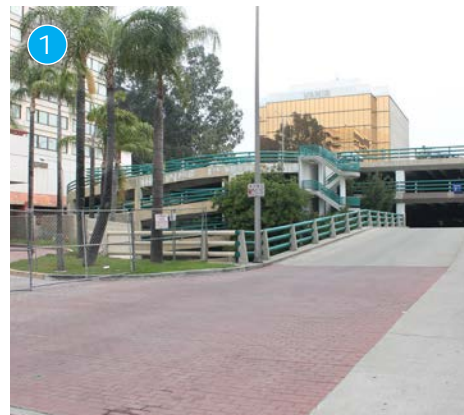
View of the Carousel Mall site at the E/4th Street intersection



# Constraints

# URBAN DESIGN

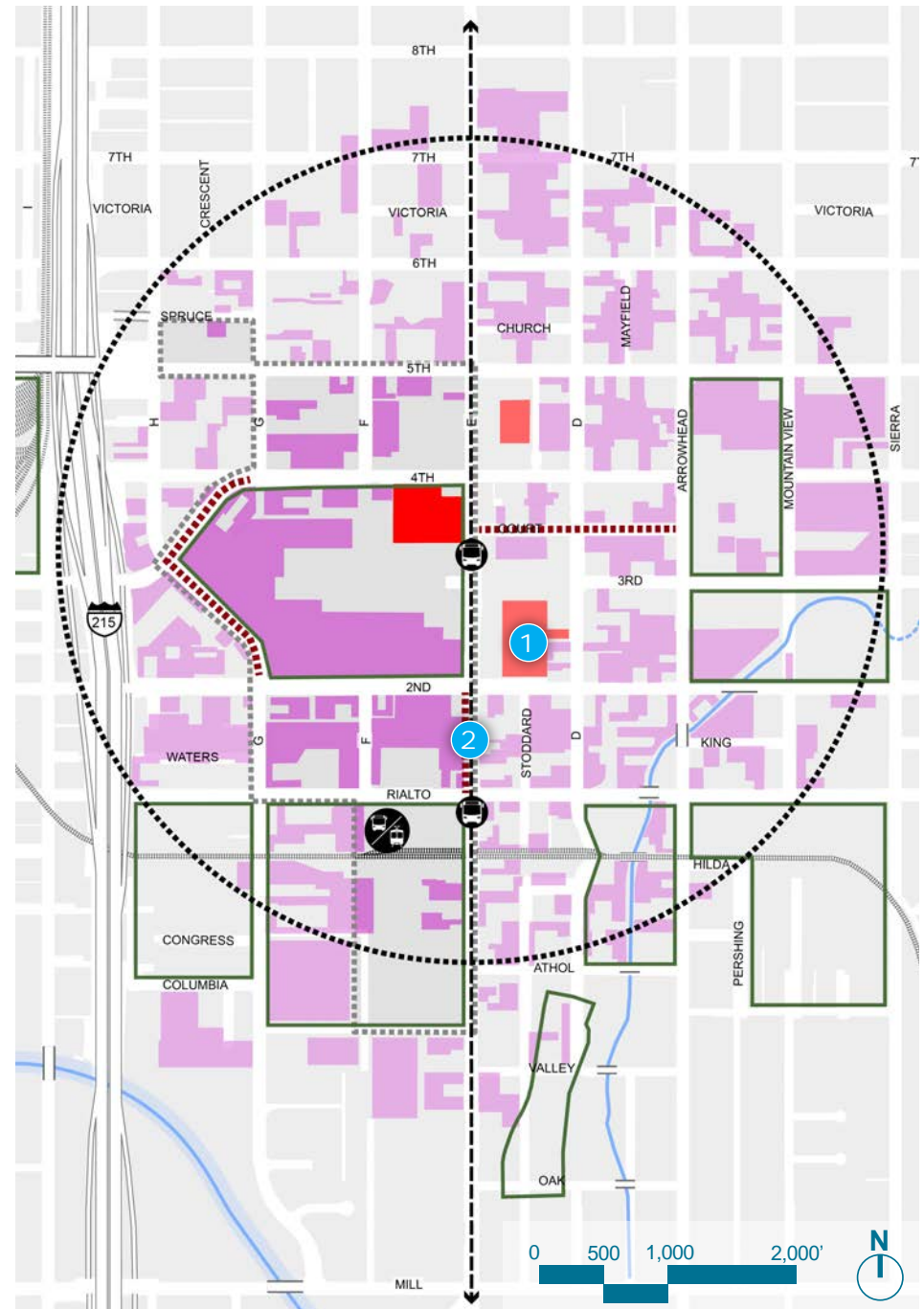
- Surface Parking:** Located throughout the study area. Surface parking is located on every block within Downtown and is the most prevalent physical feature. Surface parking lots offer far less urban design appeal than unique, pedestrian-friendly building facades.
  
- Structured parking:** There are three parking structures located within Downtown, and one within the study area. The Carousel Mall parking structure, within the study area, and the City Hall parking structure both need to be evaluated for their seismic condition to determine whether they need to be retrofitted or demolished. These structured lots could become great opportunities to supply shared parking facilities for new developments if the cost of seismic upgrades is not too expensive.
  
- Superblock:** Blocks considered not to be pedestrian friendly and walkable due to having dimensions longer than 300' in one direction. Shorter blocks provide visual relief of facades in an urban environment, creating a more appealing urban design.
  
- Corridor Constraint:** These streets are primarily lined with surface parking lots which detract from the streetscape appeal.



View of the Civic Center parking structure










View of the existing retail along E Street





# Opportunities

## URBAN DESIGN

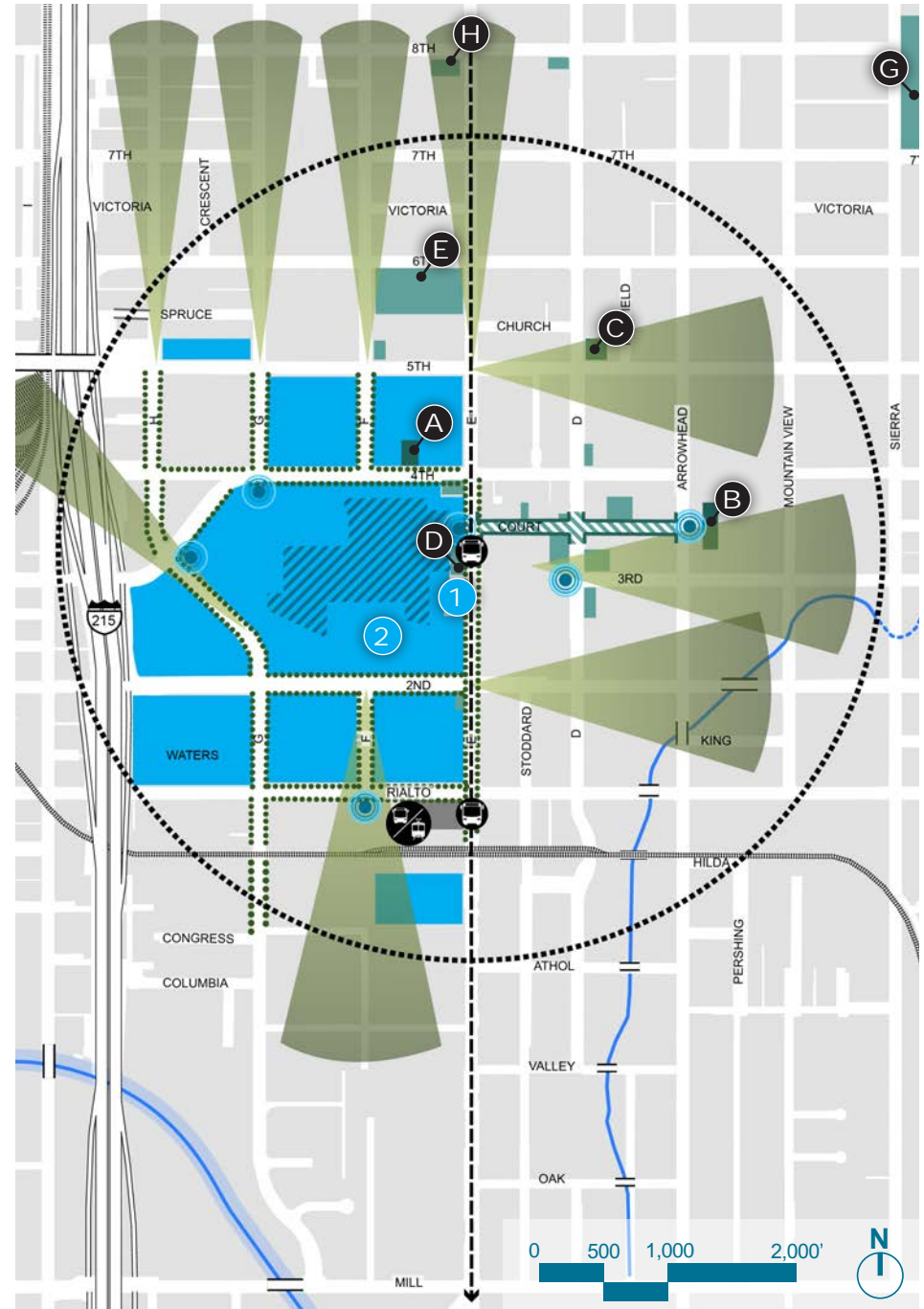
- 
**Historic Resources:** Historic resources on the National Register of Historic Places, indicated on diagram at right: (A) California Theatre, (B) San Bernardino County Courthouse, and (C) US Post Office.
- 
**California Register of Historic Places,** indicated on diagram at right: (D) Anderson Building, (E) Center of San Bernardino - 1853 (Pioneer Park), (F) Heritage House (Judge George E. Otis House), (G) Pioneer Cemetery, and (H) Sturges Auditorium (Center for the Fine Arts). Future developments should respond to the historic resources through restoration and preservation where financially feasible.
- 
**Greening / Environmental Benefits:** Street trees and bioswales. Addition of street trees where there are gaps or dead trees along Rialto, 2nd, 4th, 5th, H, G, F, and E Streets could add shade and beautification to the study area.
- 
**Topography / Excavation:** The existing Carousel Mall and parking structure have been excavated below the existing street level. Demolition of Carousel Mall (and potentially parking structure) could retain and take advantage of existing topography. Change in topography could be incorporated into public open space and design of TOD on the Carousel Mall site, or it could be used for subterranean parking below TOD in order to reduce as much as possible surface and structure parking on site.
- 
**Streetscape Enhancements:** Court Street has a pleasant pedestrian environment of historic buildings, small businesses and frontage along a park.
- 
**Mountain Views:** Mountain views are located to the northwest, north, east, and south from Downtown San Bernardino. Mountain views are accessible along street corridors and at open areas such as the current Carousel Mall surface parking lots.
- 
**Vista Terminus:** Shifts in the street grid provide opportunities for visual nodes/landmarks. Opportunities for architecturally significant landmarks and/or open space that indicate edges of or entrances into the study area can help to orient users.



View of the historic Harris Building on E Street



View of the underutilized parking lot at Carousel Mall

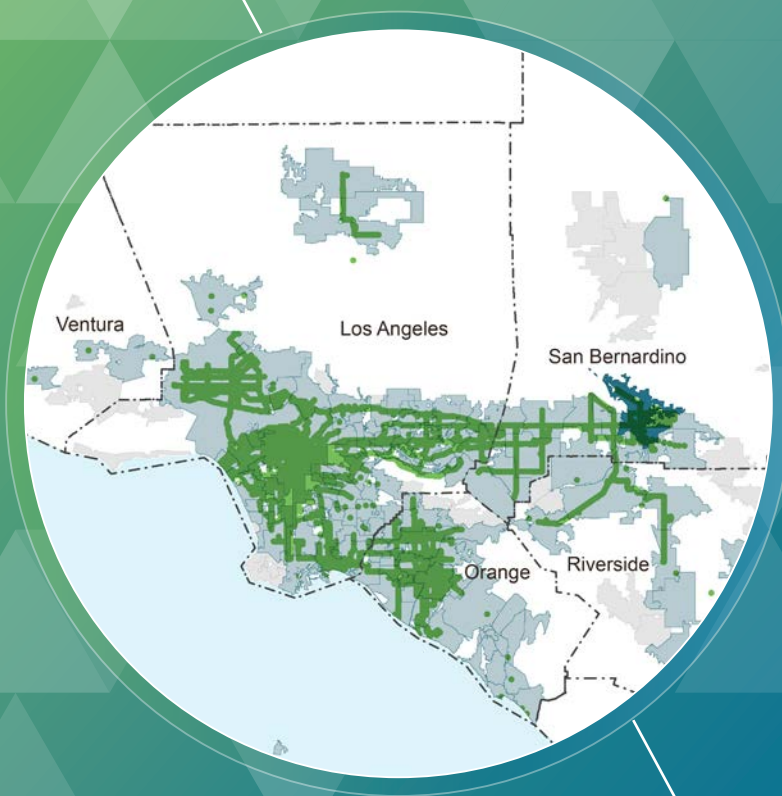




# Appendix

A - Existing Conditions Inventory

B - HQTA Toolkit



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# Appendix A Existing Conditions Inventory








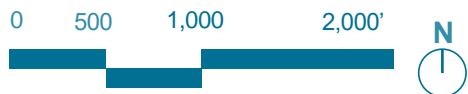


# Project Area

- 1/2 mile radius from Court Street SbX Station

## EXISTING CONDITIONS INVENTORY

-  Area of Focus
-  Transit Center
-  Sbx Route / Stop
-  1/2 mile area
-  Carousel Mall Specific Plan Area



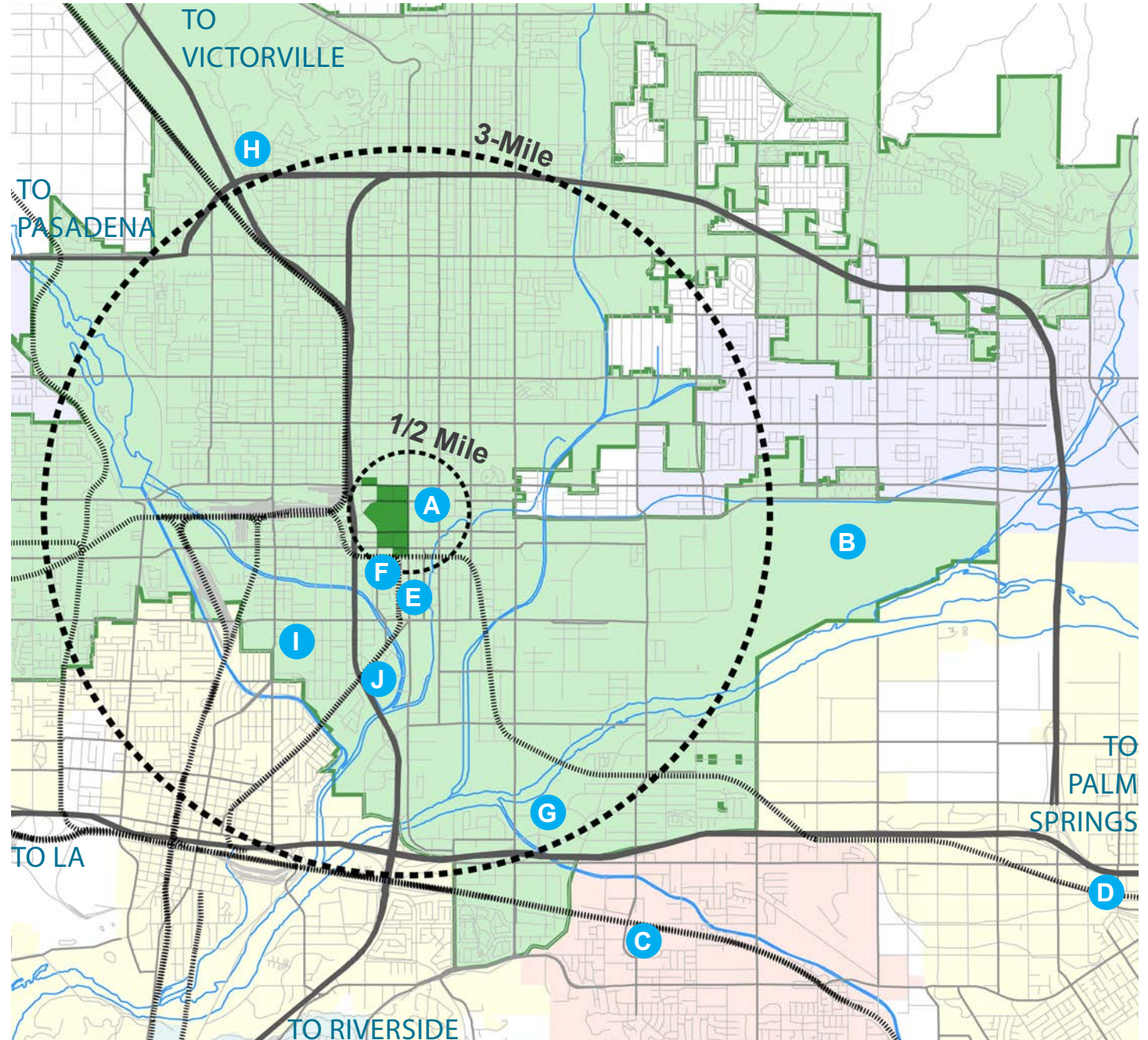
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

Source: ESRI



# Activity Centers

- A** Downtown San Bernardino
- B** San Bernardino International Airport
- C** Loma Linda University and Medical Center
- D** Downtown Redlands
- E** National Orange Show
- F** San Manuel Stadium
- G** Hospitality Lane
- H** California State University San Bernardino
- I** Valley College
- J** Inland Center Mall



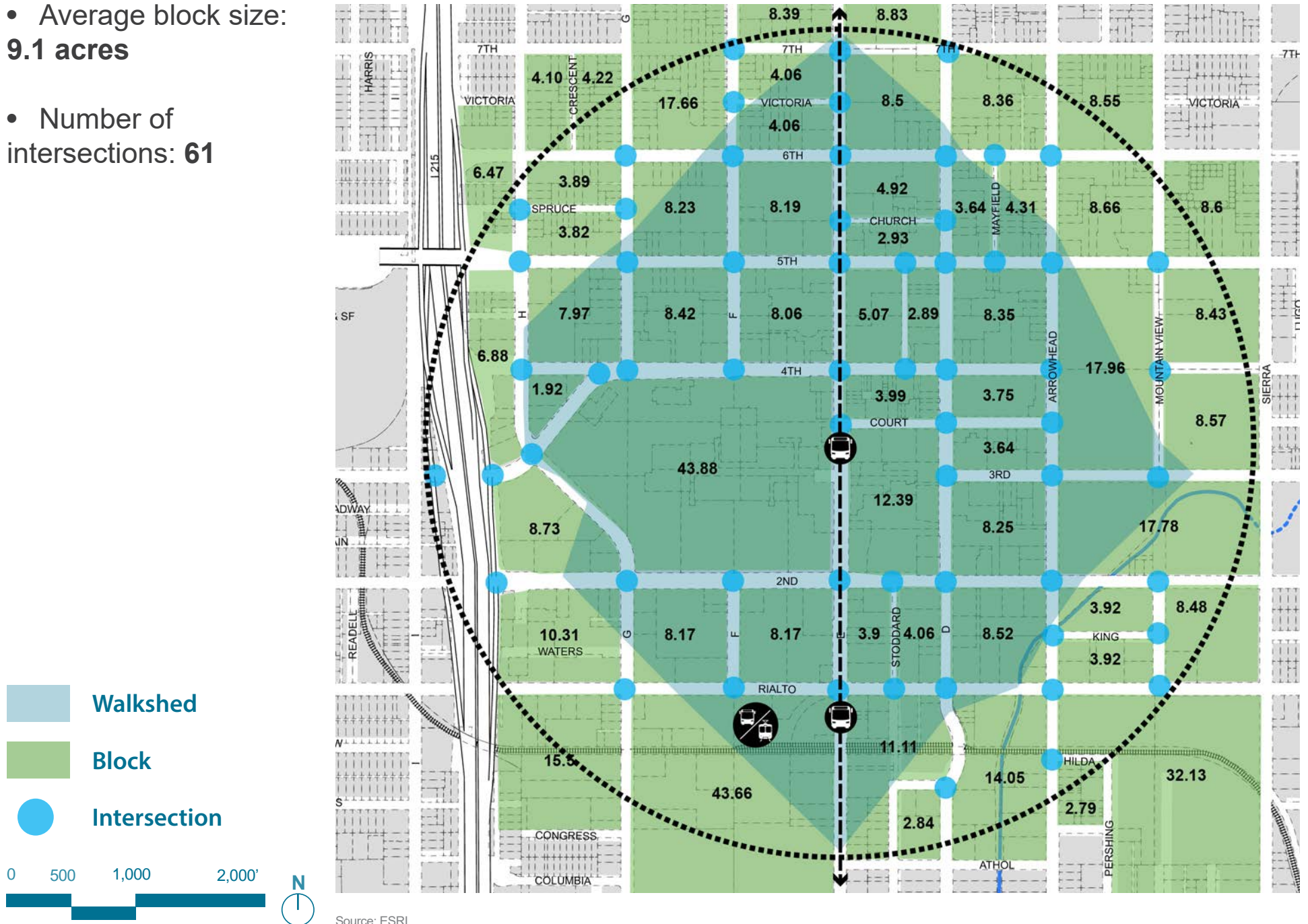
Source: ESRI



# Walkshed and Connectivity

## EXISTING CONDITIONS INVENTORY

- Average block size: **9.1 acres**
- Number of intersections: **61**



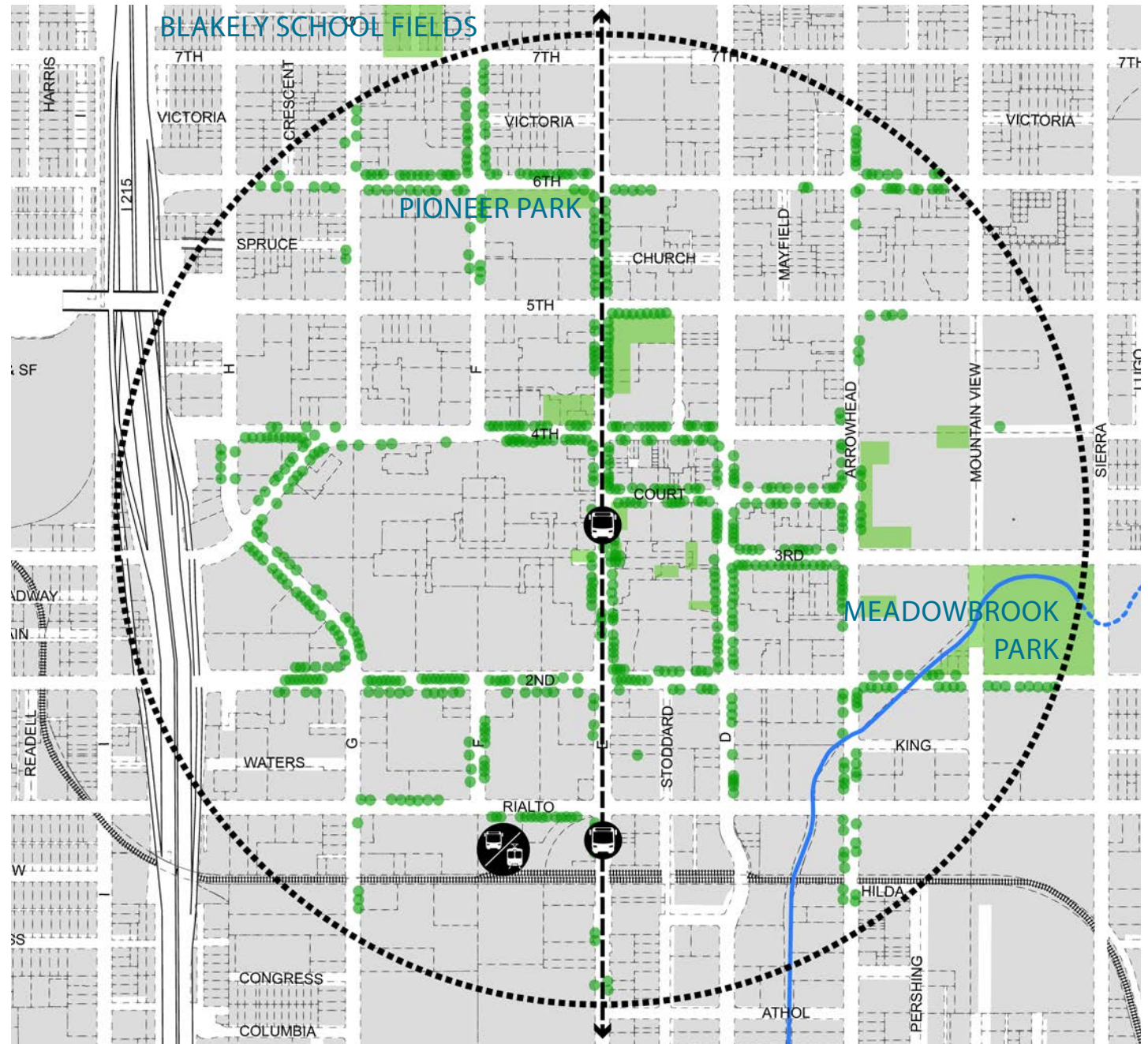


# Open Space and Street Trees

- Multiple parks west of E Street and north of 4th Street

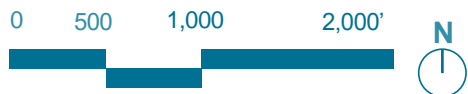
## Street tree coverage concentration:

- 4th Street
  - Court Street
  - E Street
  - D Street
- Condition, size, age, and species of street trees varies considerably



Source: Google Maps

- Open Space / Plaza
- Street Tree



# Public Transportation

## EXISTING CONDITIONS INVENTORY

- sbX Bus Rapid Transit along E Street
- Metrolink extension to Transit Center open
- Future Redlands Rail
- Service providers?
- Any service upgrades anticipated?

### Proposed

 Commuter Rail (2018)

 Local Rail

### Existing

 Bus Rapid Transit

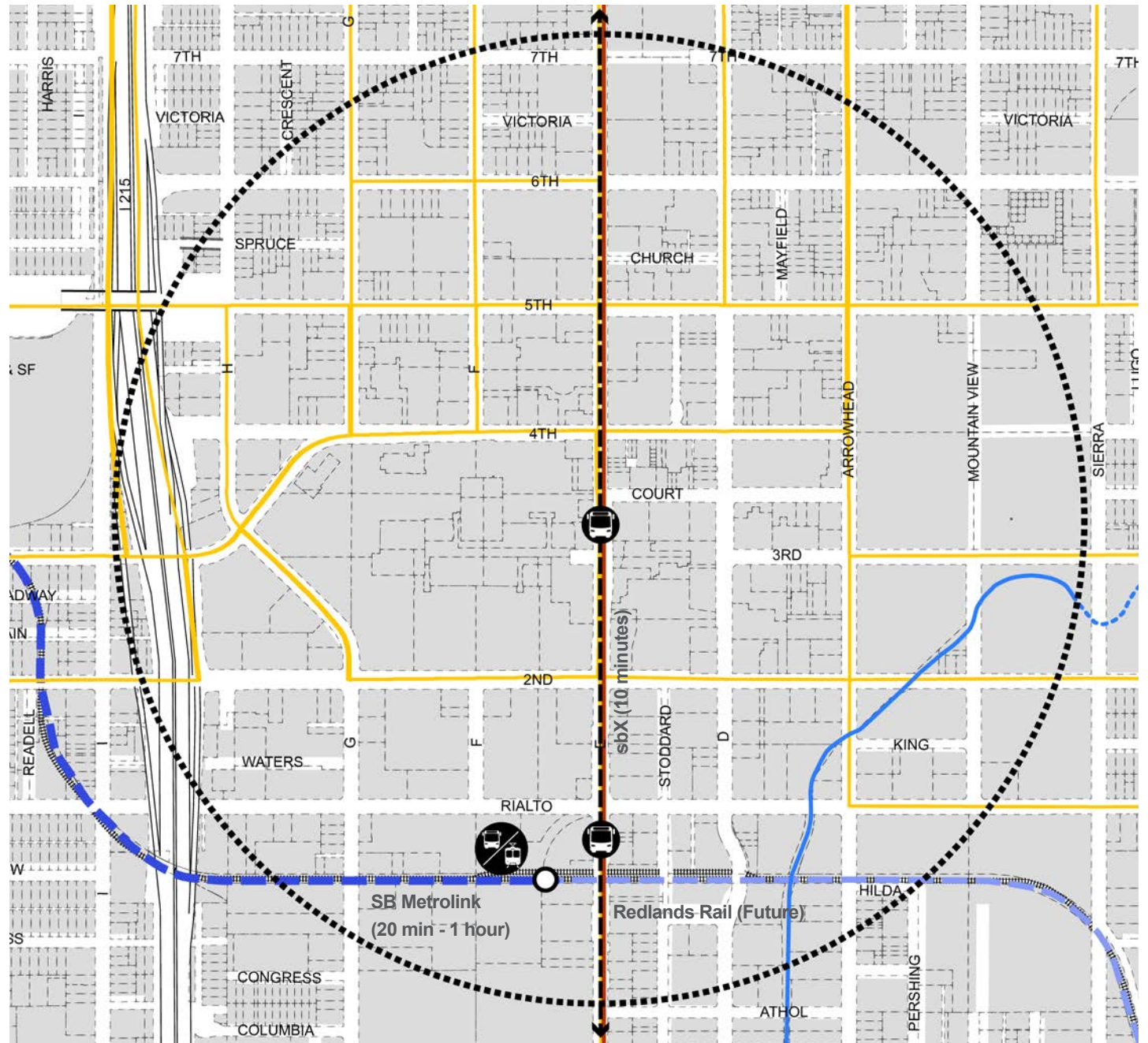
 Local Bus

 Transit Center

 Stop

 Transfer Stop

0 500 1,000 2,000'



Source: SCAG



# Bicycle Facilities

## EXISTING CONDITIONS INVENTORY

- No existing bicycle facilities

### Proposed Class II Bicycle Facilities

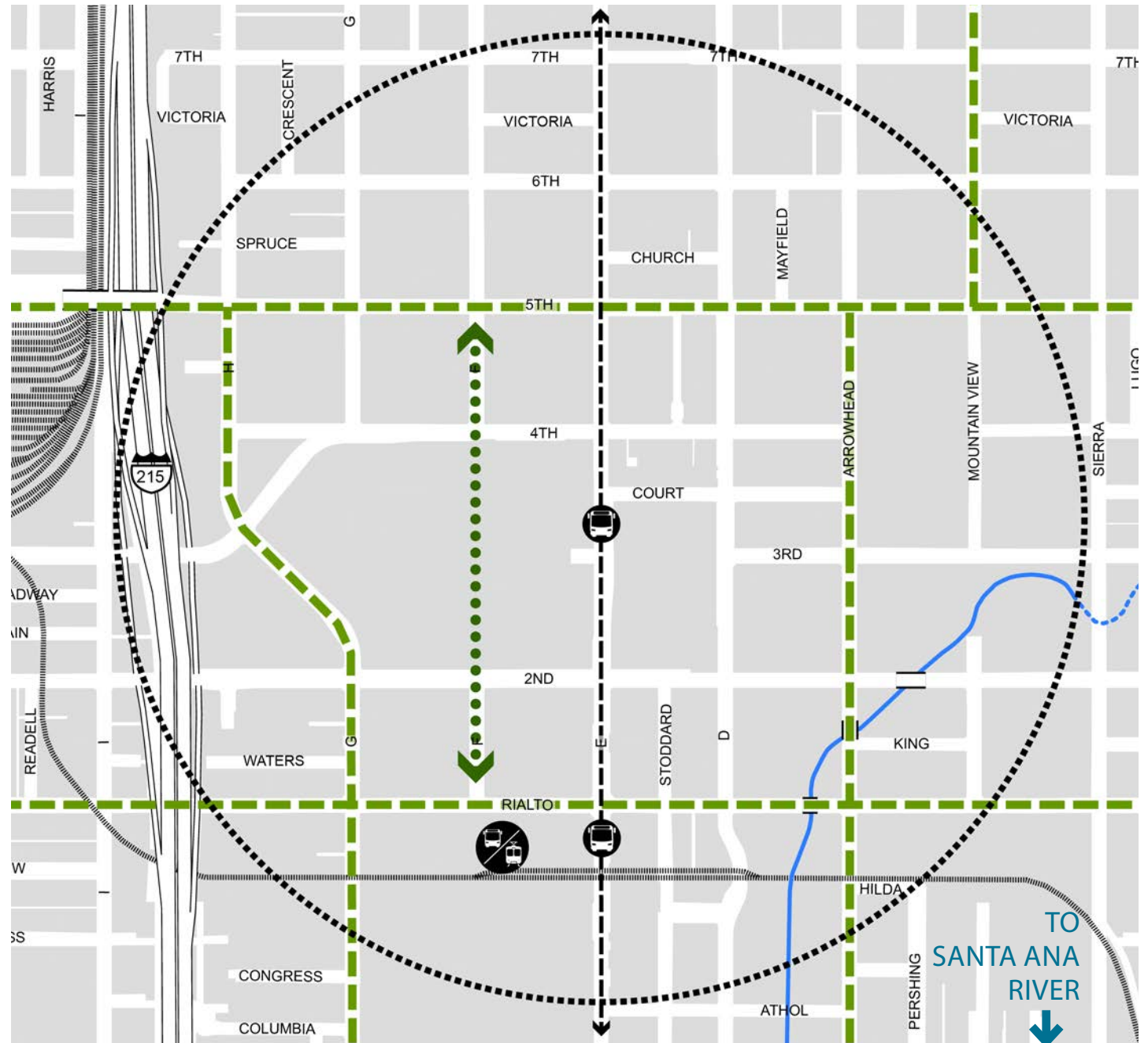
- 5th Street
- H / G Street
- Rialto
- Arrowhead
- Could consider direct route from station to site - via F Street
- No pedestrian, SRTS, or ATP plans adopted, per ATP application

◀···▶ Potential Connection

Proposed

--- Class II

0 500 1,000 2,000'



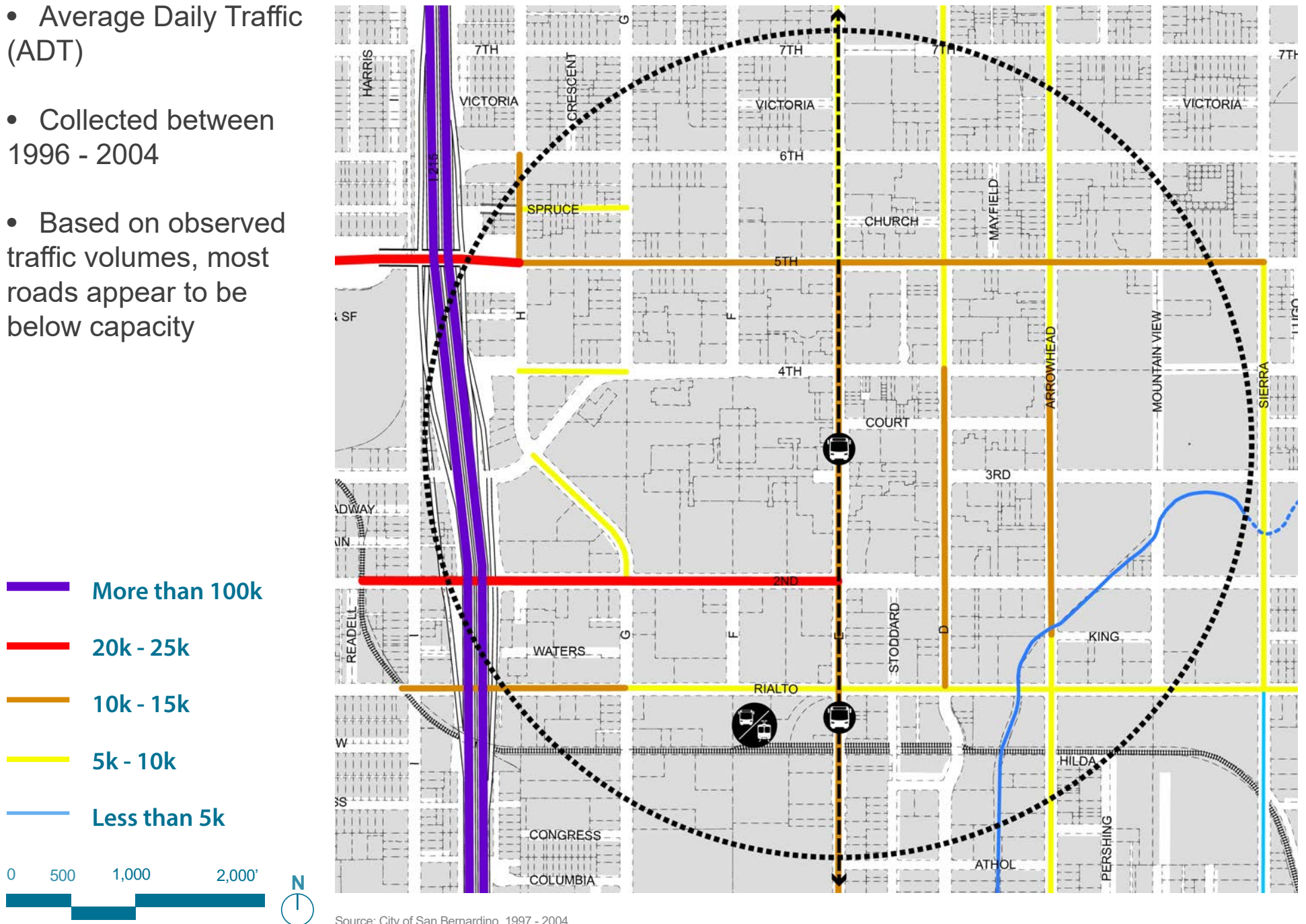
Source: County of San Bernardino Non Motorized Transportation Plan, 2015



# Traffic Volumes

- Average Daily Traffic (ADT)
- Collected between 1996 - 2004
- Based on observed traffic volumes, most roads appear to be below capacity

## EXISTING CONDITIONS INVENTORY



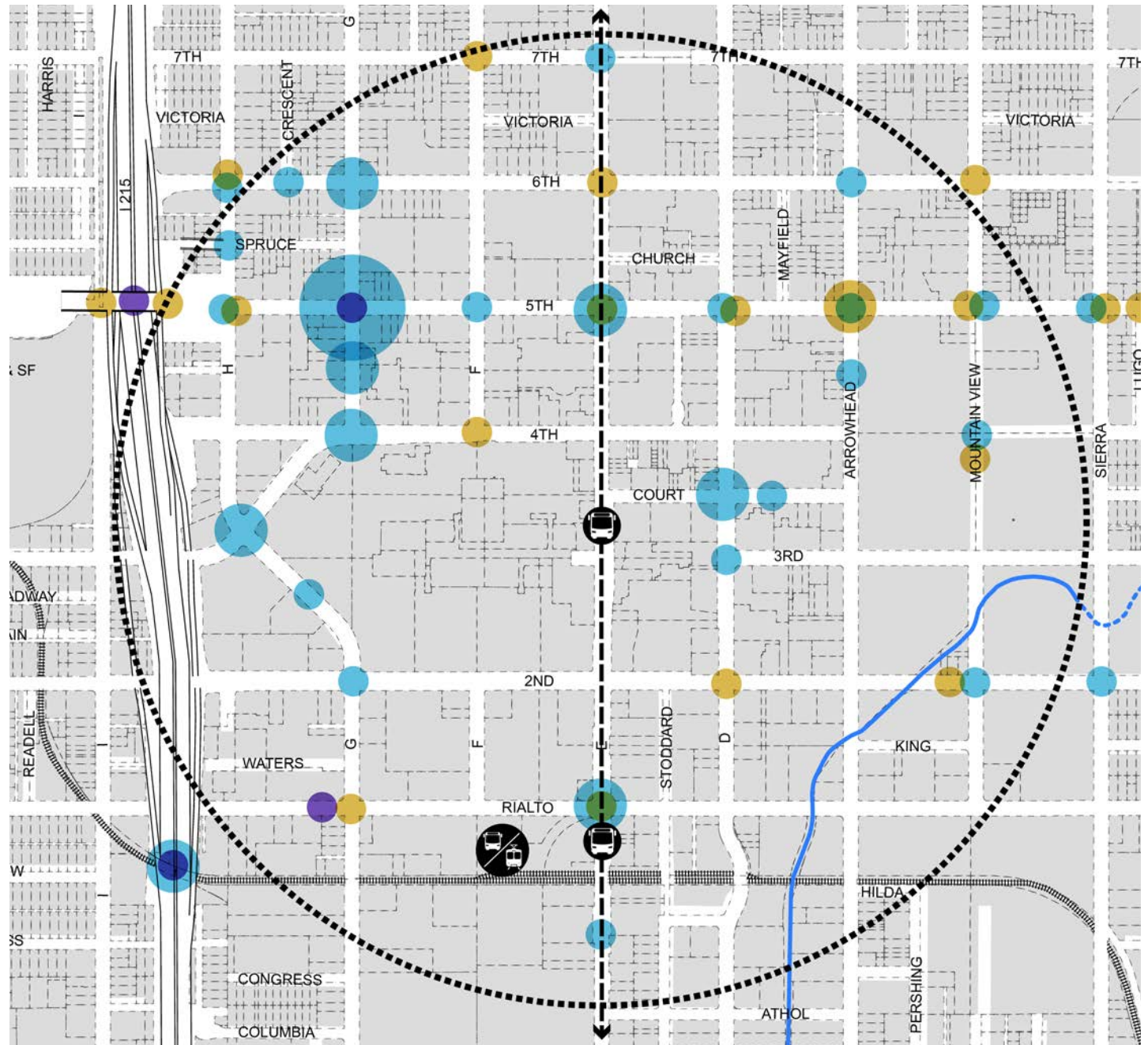
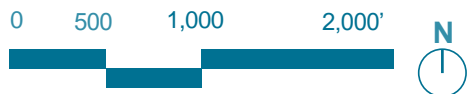
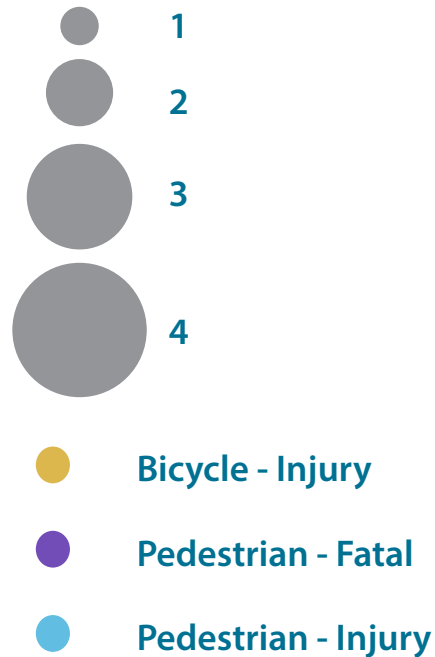
Source: City of San Bernardino, 1997 - 2004.

# Vehicle - Bicycle / Pedestrian Collisions

EXISTING CONDITIONS INVENTORY

- Crashes at every intersection along 5th Street
- G and 5th has high concentration of crashes

## Number of Crashes











Source: SWIRTS, 2006 - 2016

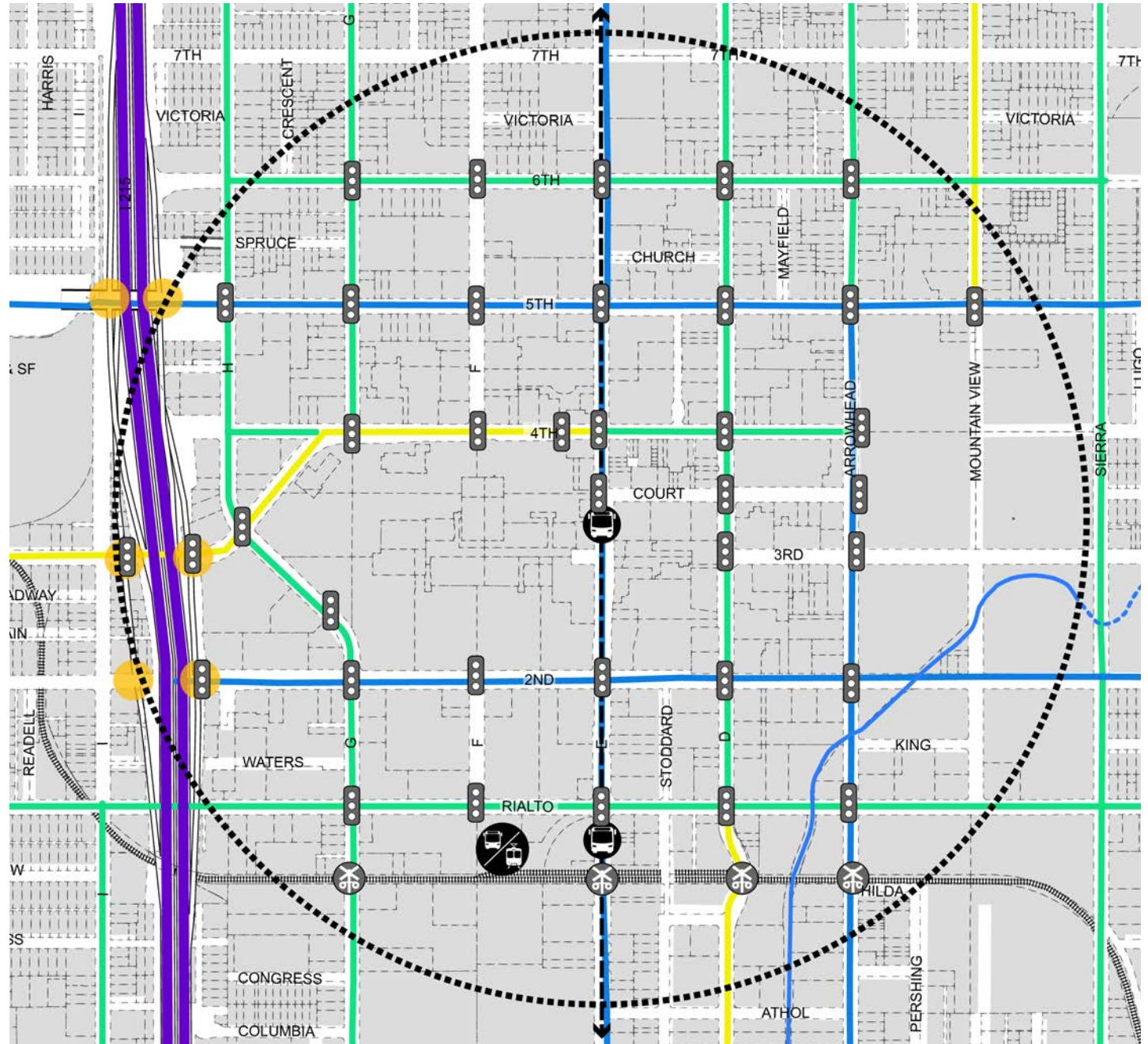
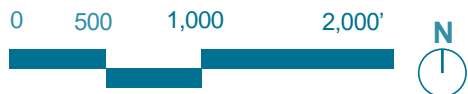


# Street Classification and Traffic Signals

## Major Arterials

- 5th Street
- 2nd Street
- E Street
- Arrowhead
  
- Reconnect G and F through Carousel Mall
  
- Need for freeway connections?

-  Street signal
-  Rail crossing signal
-  Highway Access
-  Highway
-  Major Arterial
-  Secondary Arterial
-  Collector
-  Local street

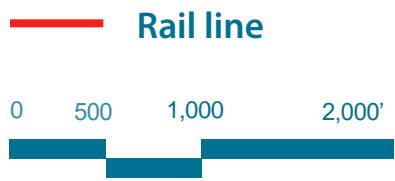
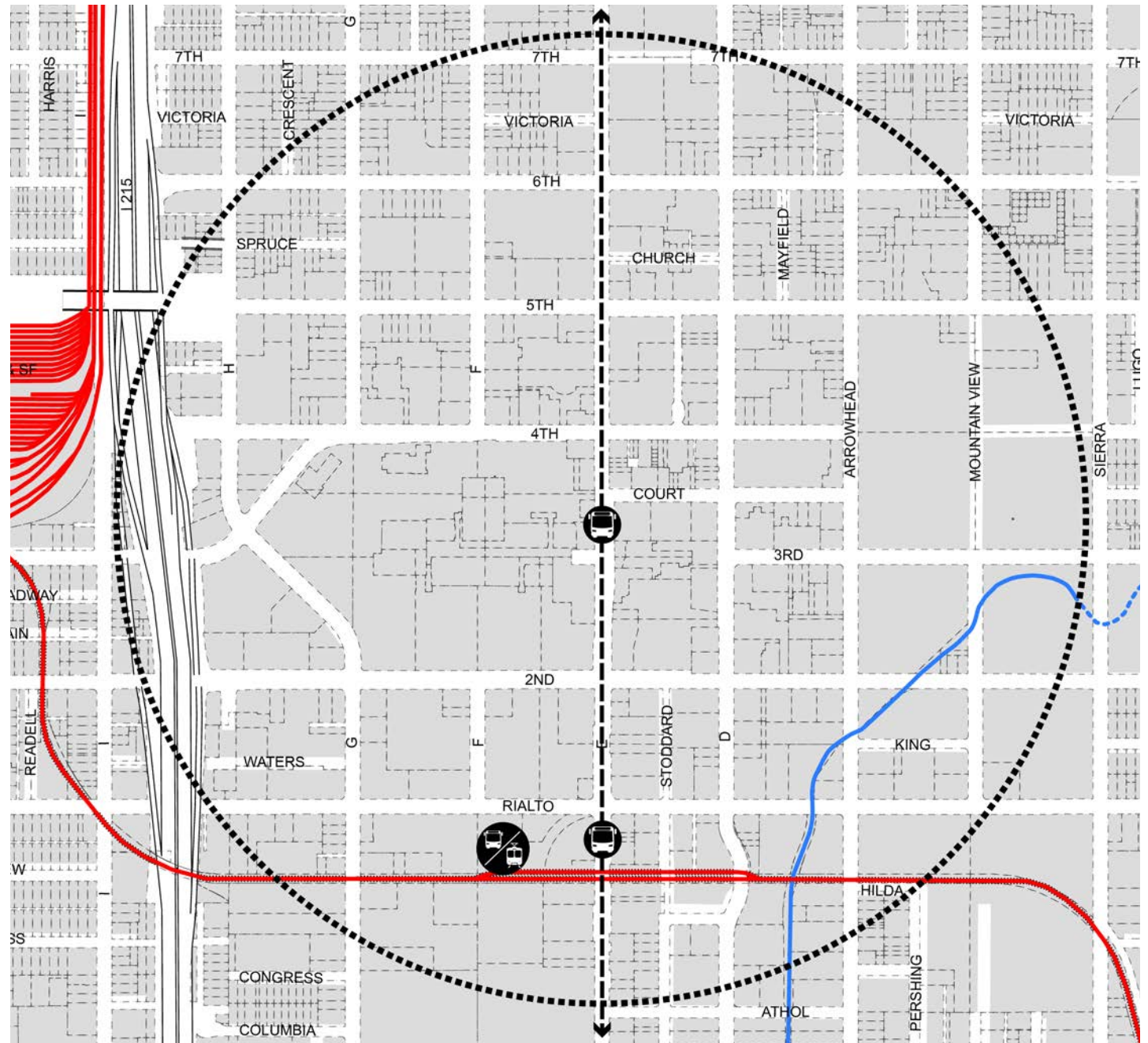


Source: City of San Bernardino General Plan (Classification), Google Maps (Signals)



# Rail Lines and Truck Routes

- Rail line south of Rialto - will be used for Metrolink and Redlands Rail
- Rail yard west of I-215
- General Plan Policy 6.5.1: Provide designated truck routes for use by commercial/ industrial trucking that minimize impacts on local traffic and neighborhoods.
- No designated truck routes in study area from General Plan?







Source: ESRI

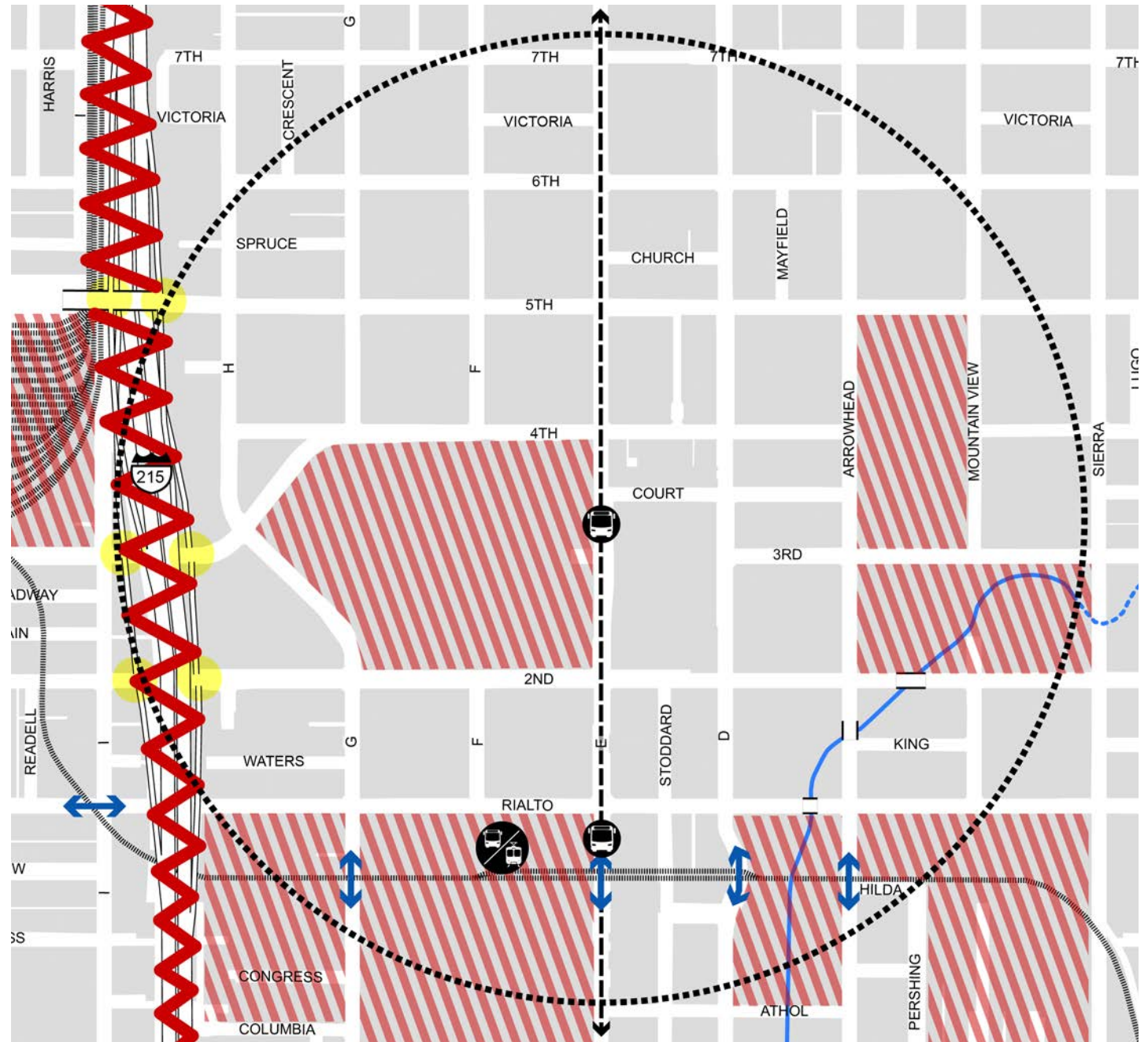
# Pedestrian Access and Barriers

EXISTING CONDITIONS INVENTORY

- 5th Street on/off ramps
- Transportation Center / E Street
- Theater Square
- 2nd Street on/off ramps
- Superblock: block lengths longer than 500' are larger than average

-  Pedestrian Rail Crossing
-  Barrier
-  Superblock
-  Freeway On-/Off-ramps

0 500 1,000 2,000'



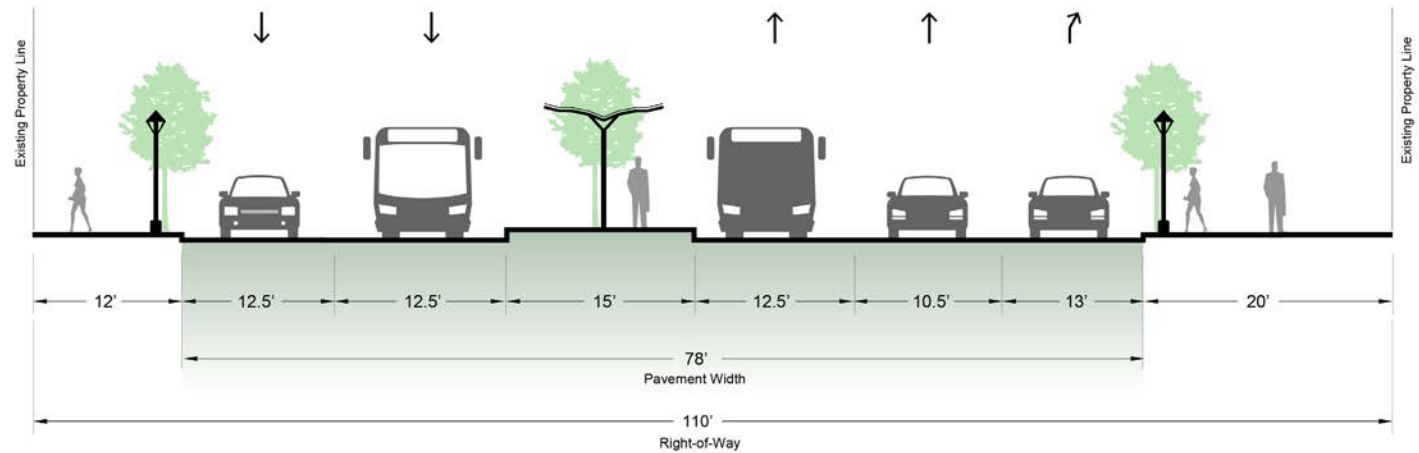
Source: Google Maps



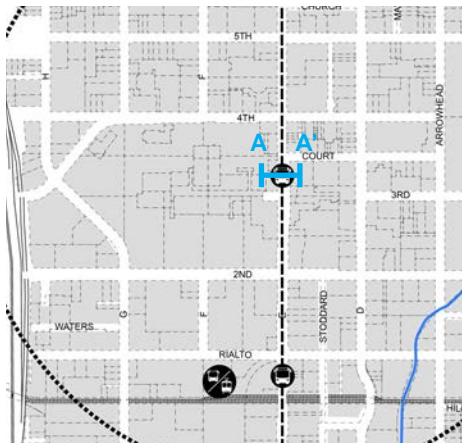
# E Street (between 2nd and 4th)

- 2 general purpose travel lanes, 2 bus only lanes
- No on-street parking
- Pedestrian-oriented lighting
- Street trees
- Center median and BRT platforms

Section A - A'



Source: Google Maps

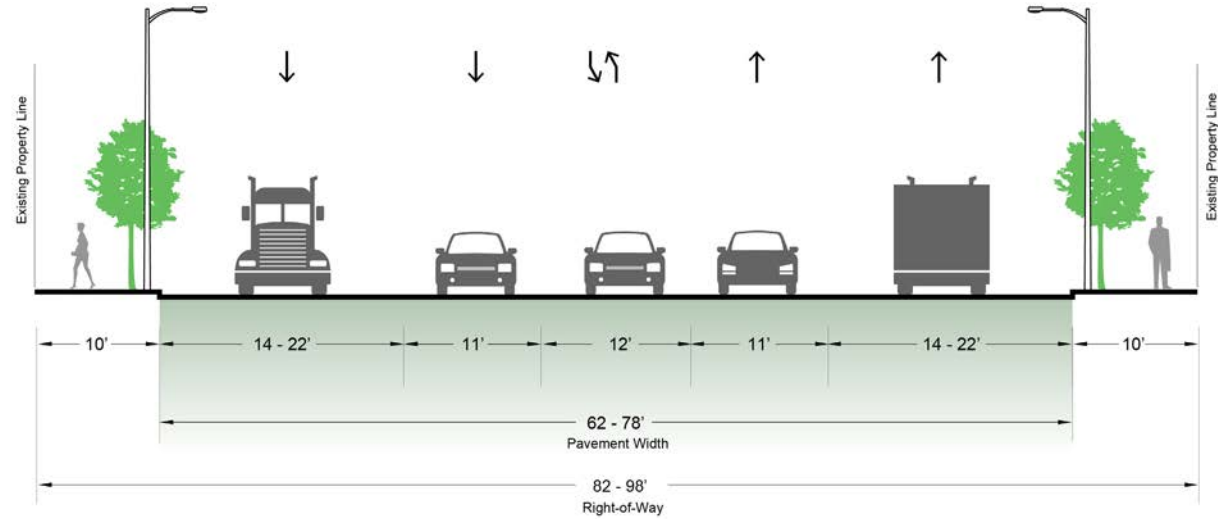




# G/H Streets

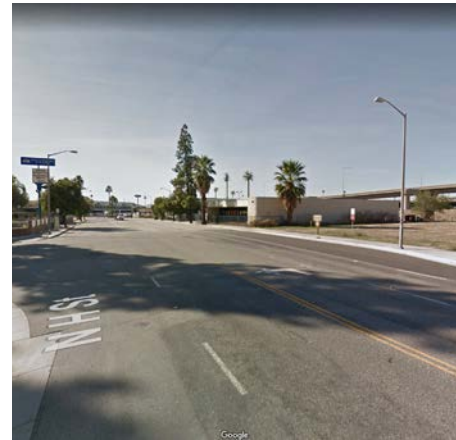
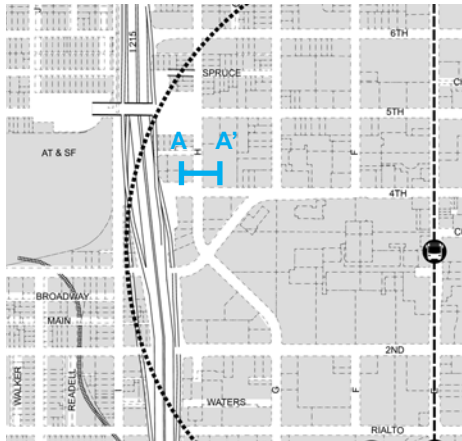
- 4 travel lanes, 1 left-turn lane
- No on-street parking north of 4th Street
- Highway style street lights
- Limited street trees

## Section A - A'



Source: Google Maps

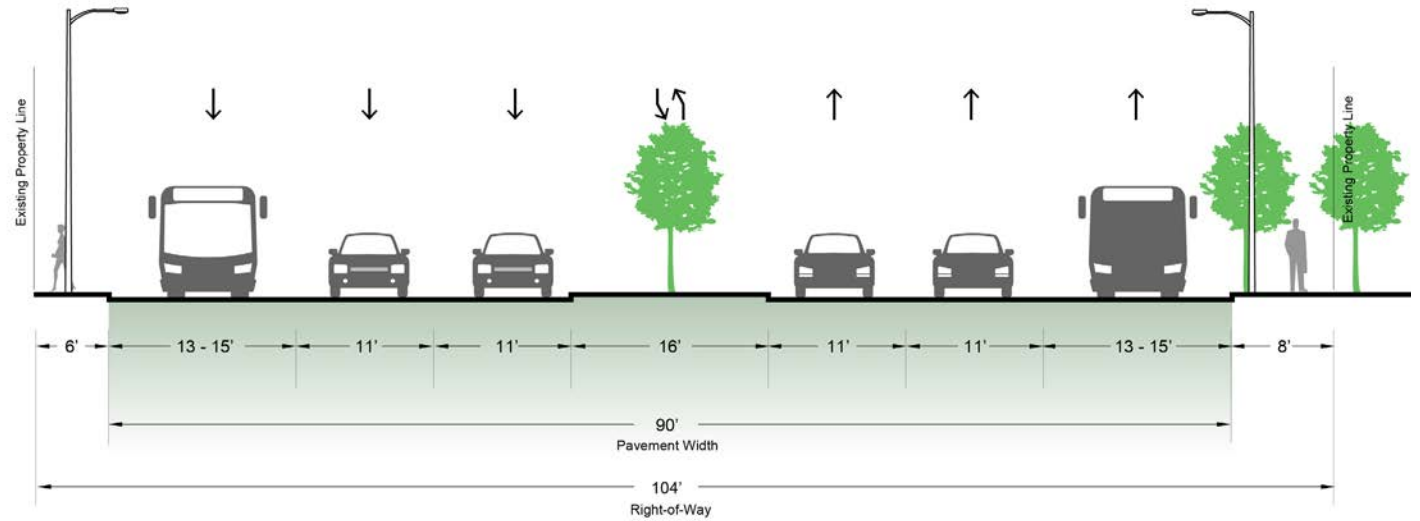
## EXISTING CONDITIONS INVENTORY



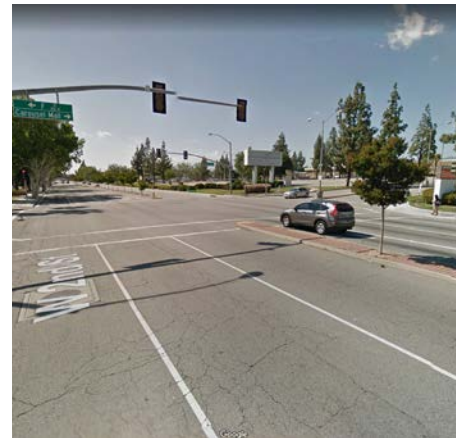
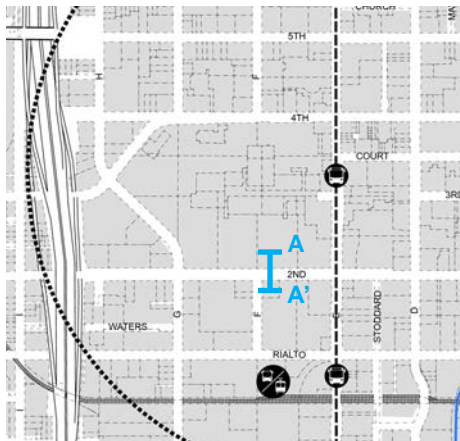
# 2nd Street

- 6 travel lanes, left-turn lane
- Narrow sidewalks
- Sidewalks on north obstructed by street lights
- Center landscape median
- Highway style street lights
- Inconsistent parkway trees

## Section A - A'



Source: Google Maps

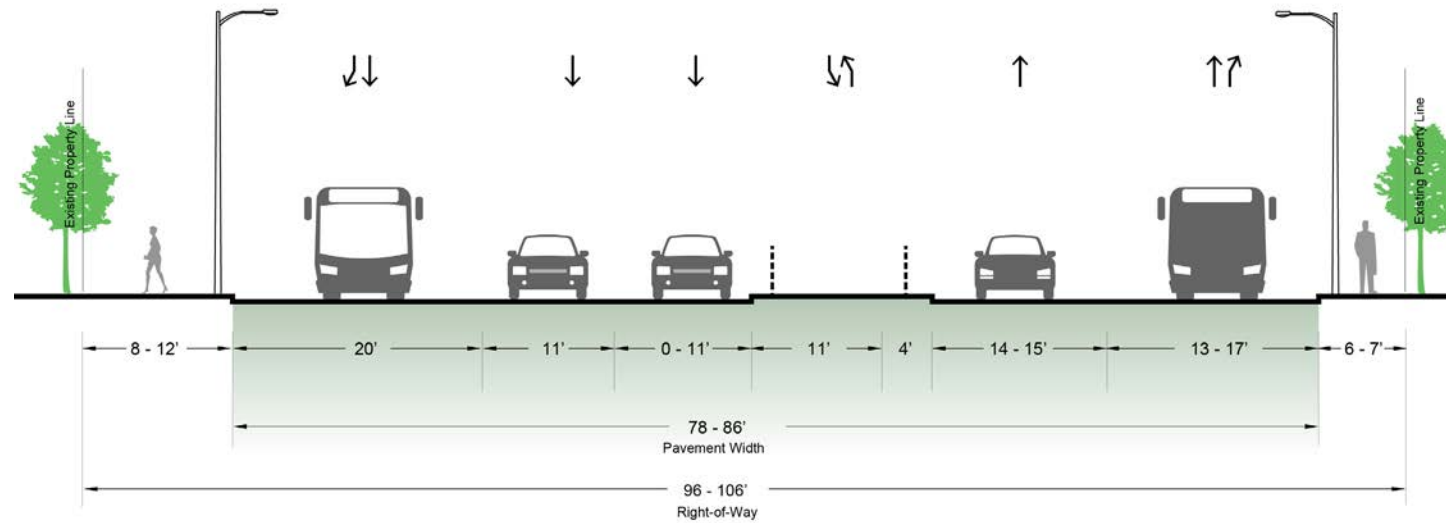


# 4th Street

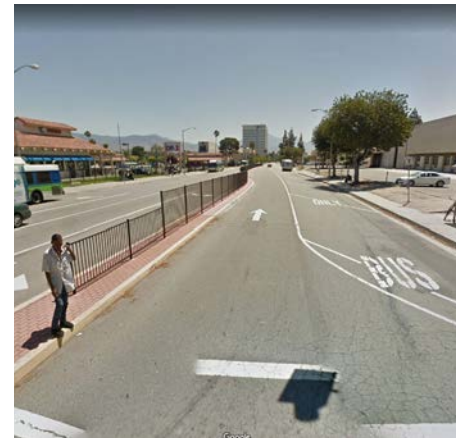
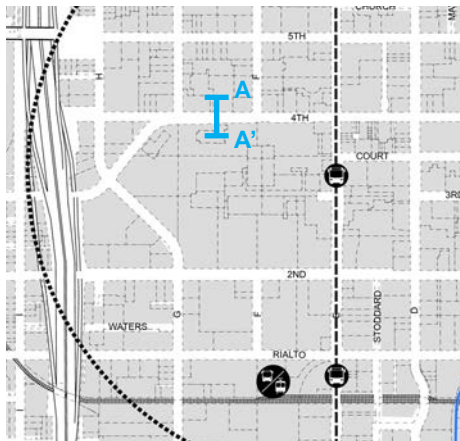
- Number of travel lanes and widths for each direction vary along corridor
- 5 travel lanes, 1 left-turn lane
- Center median barrier
- Highway style lighting
- Potential for road diet?

## EXISTING CONDITIONS INVENTORY

### Section A - A'



Source: Google Maps



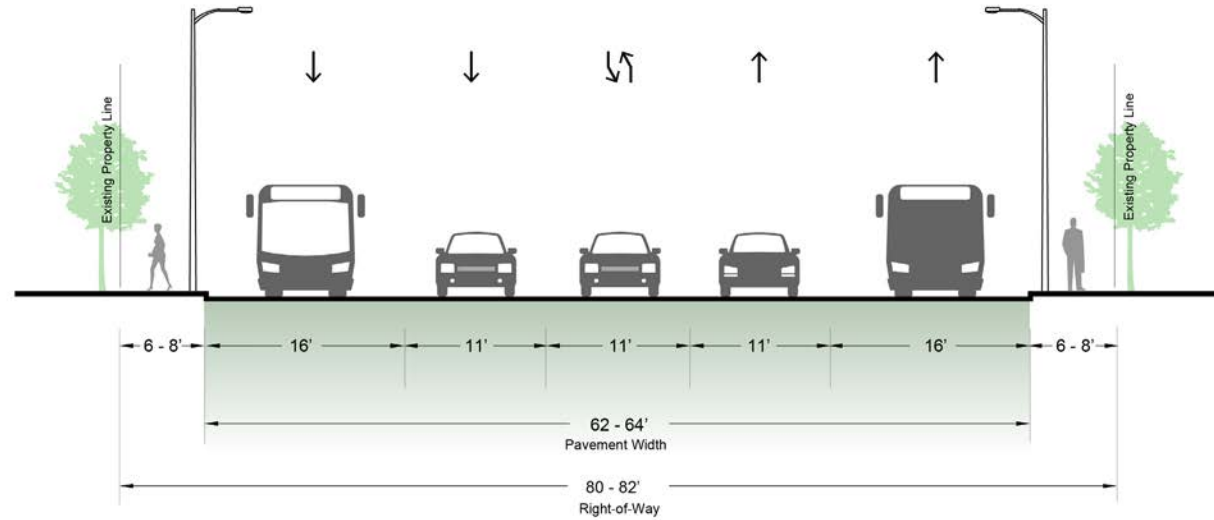


# 5th Street

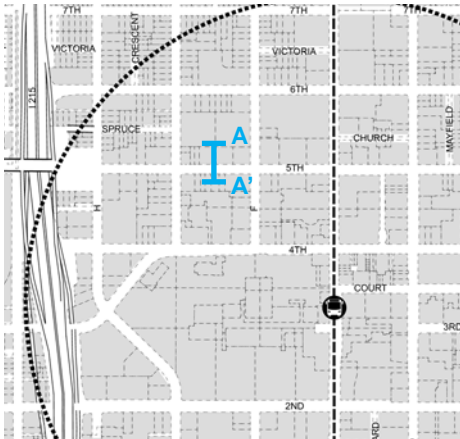
- 4 travel lanes, 1 left-turn lane
- Limited street trees
- Highway style lighting
- Access from I-215
- High rate of vehicle - pedestrian/bicycle collisions

## EXISTING CONDITIONS INVENTORY

### Section A - A'

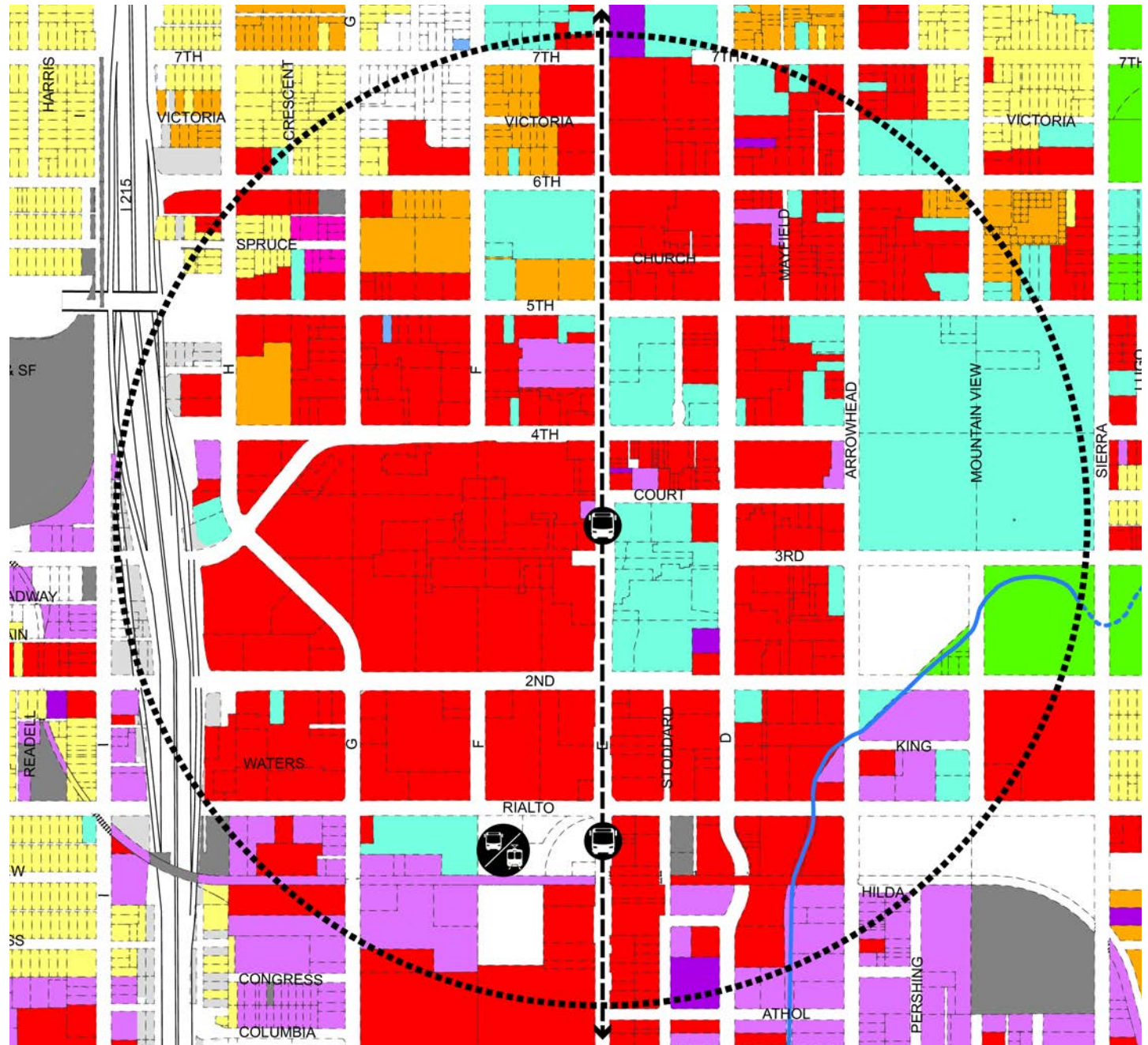
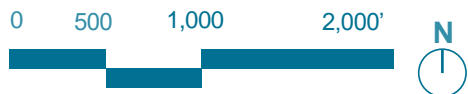
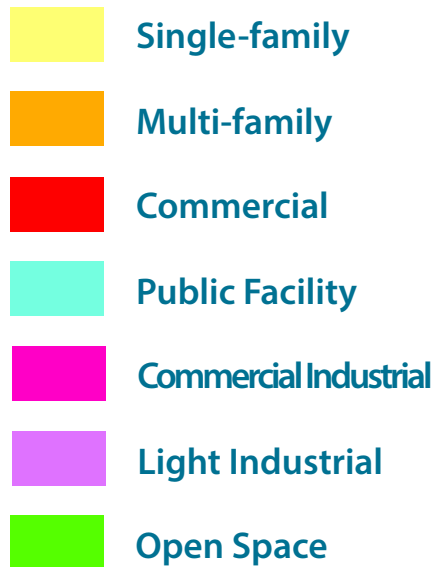


Source: Google Maps



# Existing Land Use

- Commercial is the primary land use within 1/2 mile area
- Public facilities and multi-family complement commercial land uses

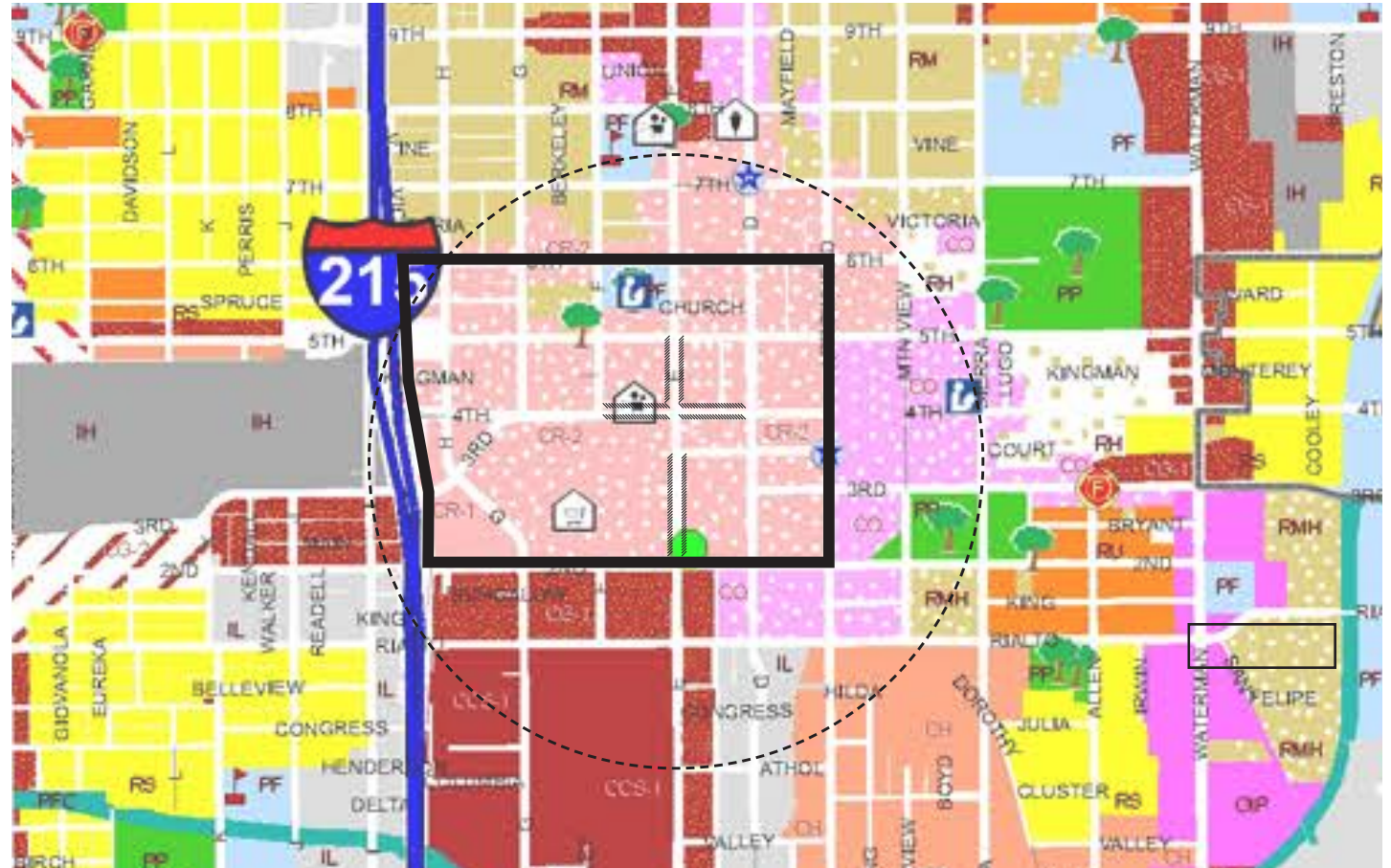


Source: SCAG, 2012.



# Transit District Overlay Zone

- Allow and encourage appropriate mix of land use and intensity in compact pattern
- Underlying zones: CR-1, CR-2, CG-1, CO, RM
- Build-to line: maximum 15' setback; maximum 100' height (7 stories)
- Criteria for density bonus?
- Areas not along build-to line: density and FAR?



Commercial		Industrial		Public		Residential	
CCS-1-General	CO-Office	IL-Light	IH-Heavy	PP-Park	RE-Estate	RH-High	RL-Low
CCS-2-Service	CR-1-Regional-Malls	IE-Extractive	OIP-Office Industrial Park	PFC-Facility	RL-3.5-Low (3.5 Units/Acre)	RM-Medium	RMH-Medium High
CG-1-General	CR-2-Regional-Downtown	UBP-University Business Park	CALMAT	OS-Open Space	RL-3.5-Low (3.5 Units/Acre)		
CG-2-General-Baseline/Mt Vernon	CR-3-Regional-Tr City/Club			PFC-Flood Control			
CG-3-General-University Village	CR-4-Regional-Auto Plaza			PCR-Commercial Recreation			
CG-4SP							

Build-to Line

TD Overlay Zone

Source: City of San Bernardino, 2007



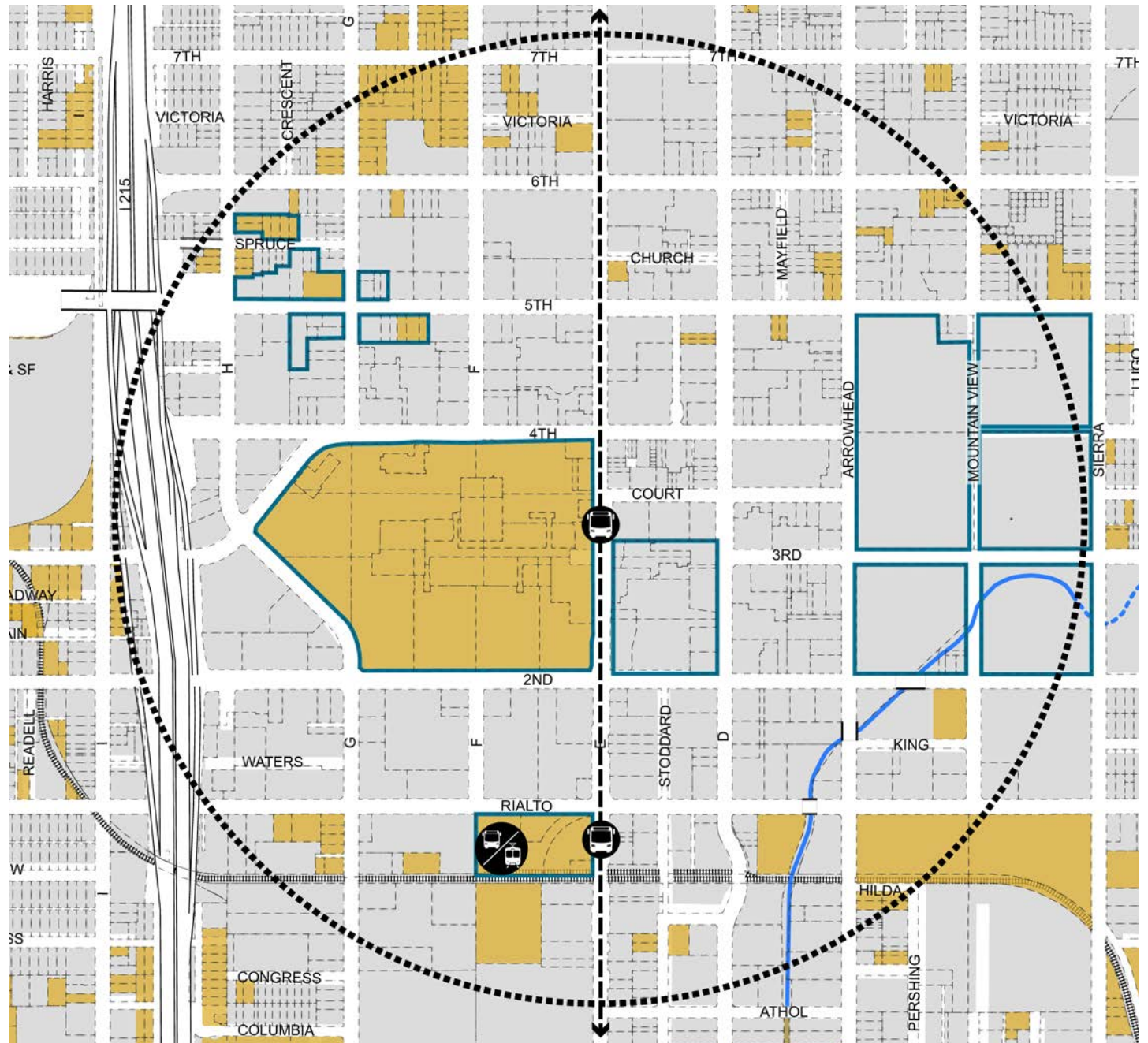
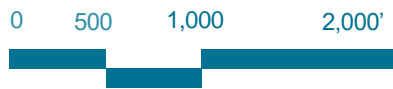
# Vacant and Publicly-Owned

## EXISTING CONDITIONS INVENTORY

- Carousel Mall
- Most vacant sites located around periphery of 1/2 mile area

### Publicly-owned

- Former RDA?
- Public facilities?



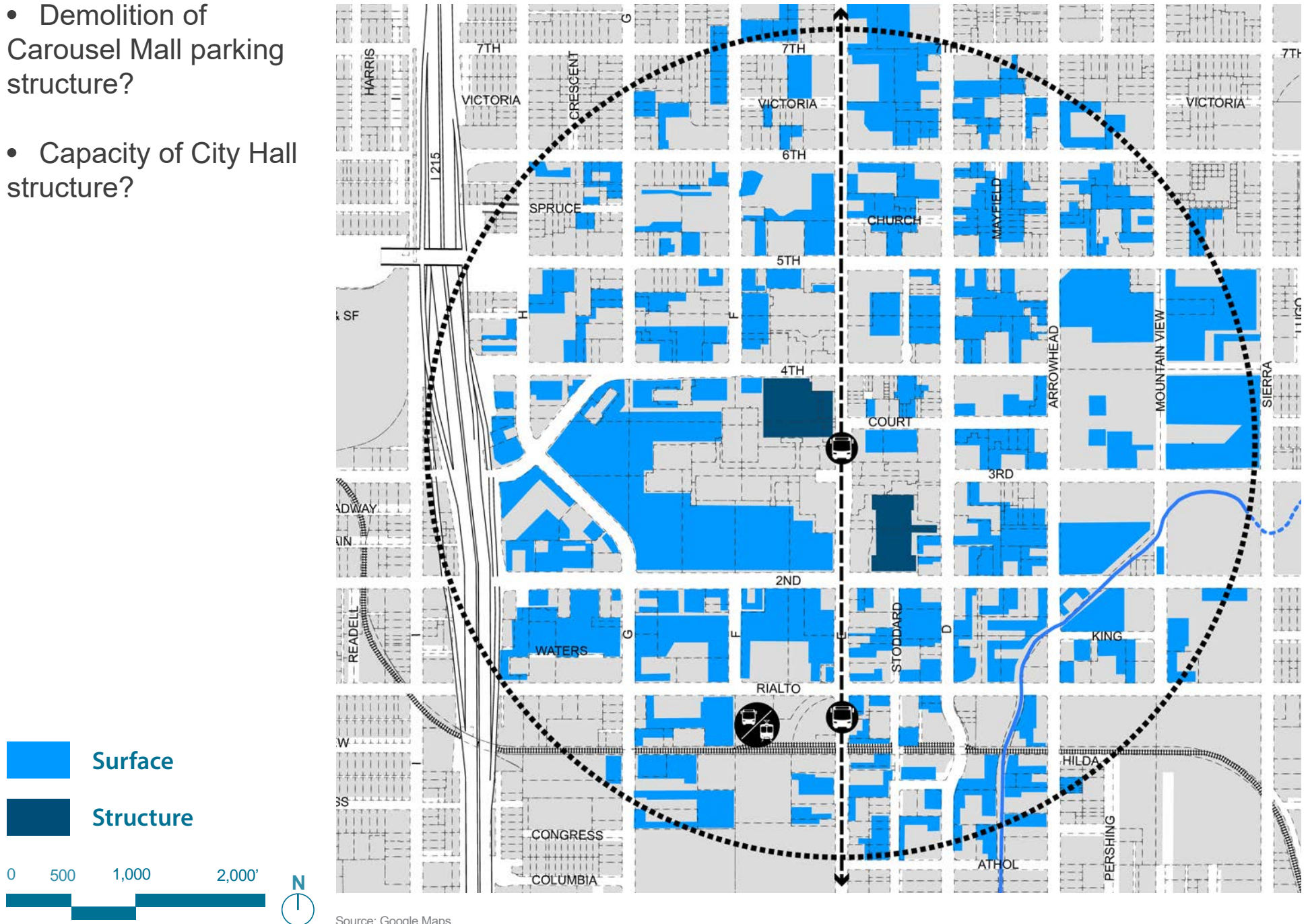
Source: ARRIVE Corridor, 2015



# Parking

- Demolition of Carousel Mall parking structure?
- Capacity of City Hall structure?

## EXISTING CONDITIONS INVENTORY

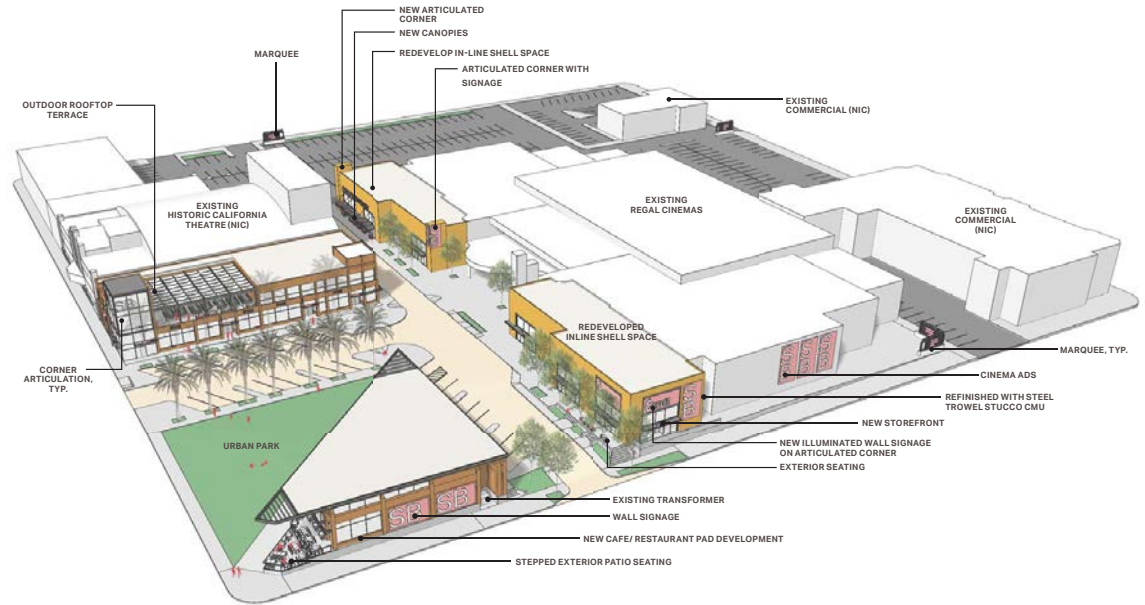


# Recent / Planned Developments

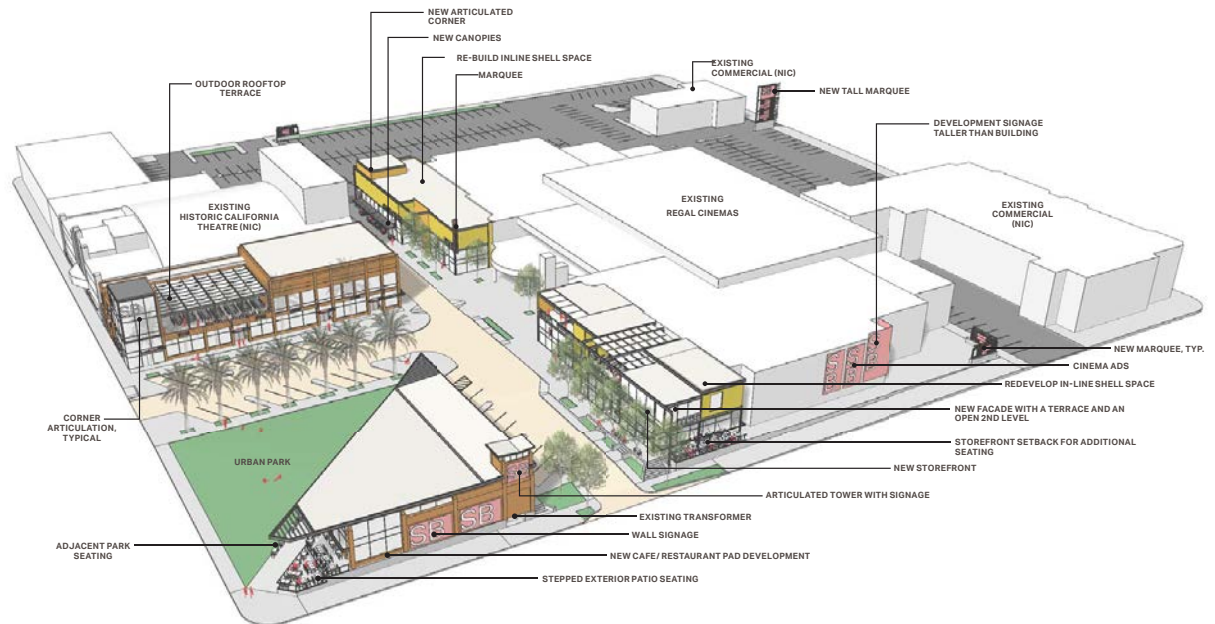
- Theater District Development

## EXISTING CONDITIONS INVENTORY

### OPTION 1 - REDEVELOPED IN-LINE SHELL SPACE AND NEW PAD DEVELOPMENT



### OPTION 2 - BUILDING RE-BUILD AND NEW PAD DEVELOPMENT





# Recent / Planned Developments

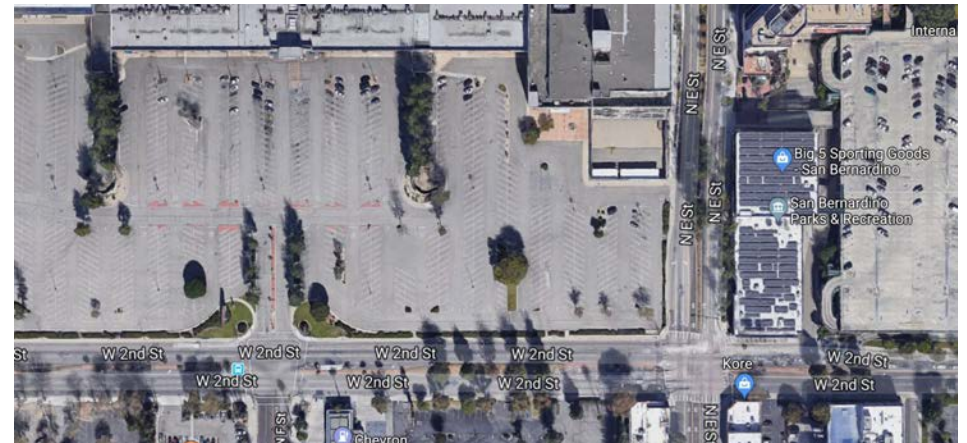
## 5th Street

- Former redevelopment agency properties



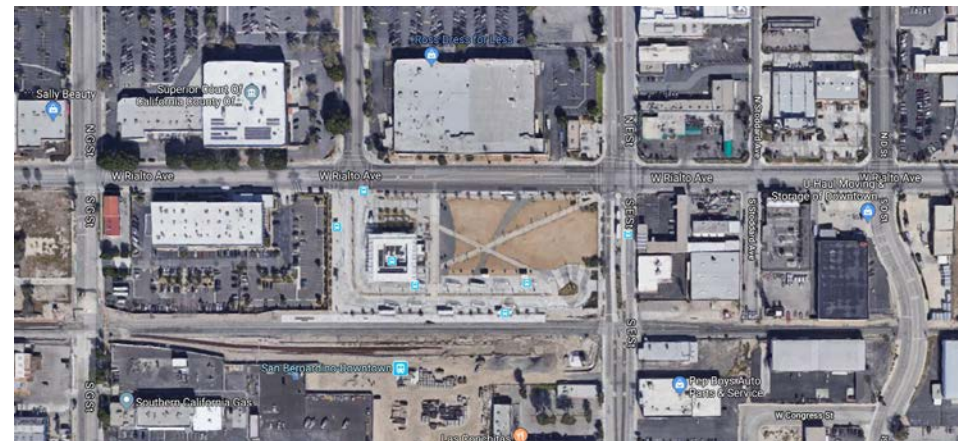
## Carousel Mall

- Proposed townhouse development



## Transit Center

- Joint development opportunities?





# Draft Specific Plan

- Development vision

## Draft Plan Elements:

- Land use concepts
- Shared parking district
- Open Space Plan
- Design Guidelines
- Implementation



Artist's Vision of the future downtown, Vision & Action Plan 2009

Source: Carousel District Specific Plan (2017)

# Draft Specific Plan

## EXISTING CONDITIONS INVENTORY

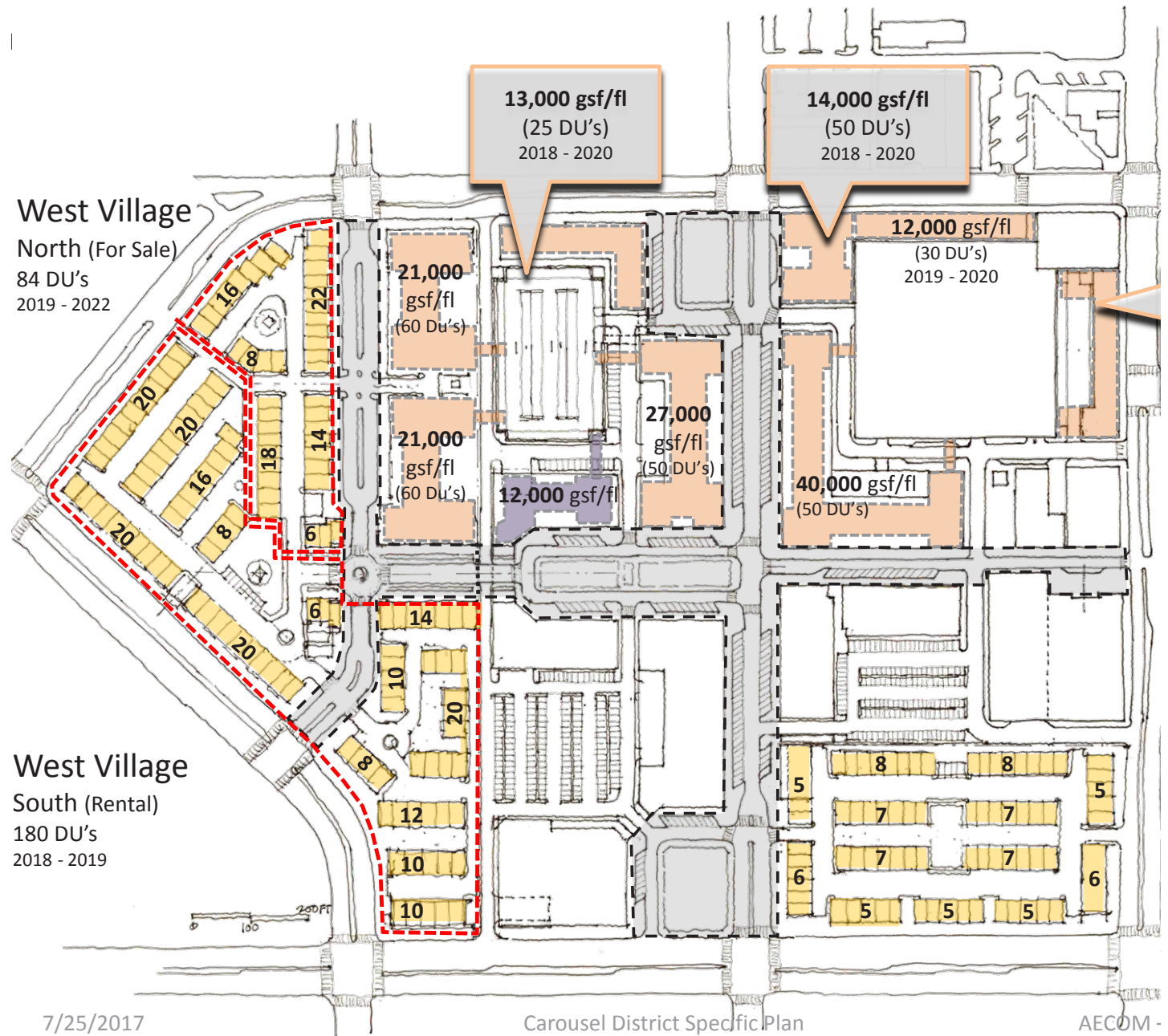
- Development Plan (inconsistent with Vision and Action Plan, 2009)

- Introduce street network through Carousel Mall

- G
- F
- 3rd

- Only covers Carousel Mall?

- Status / timeline of Specific Plan?



Source: Carousel District Specific Plan (2017)



- Densities of 20-60 units per acre

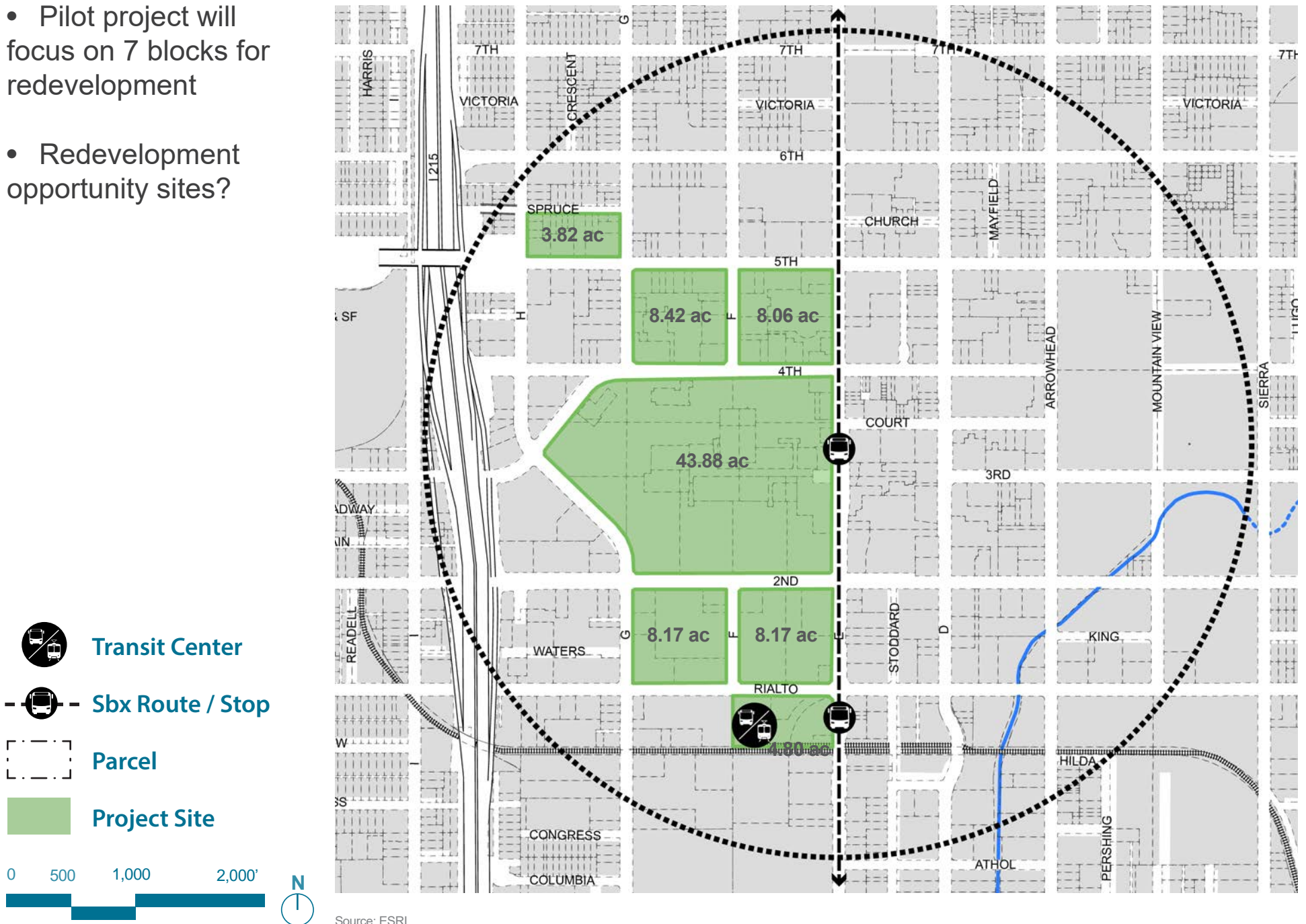
Project Phasing				
	BLOCK #	gsf/#DU's	Contract -Completion Date	Site Area
Block 'B'	B1_Parking Structure	122,500 gsf/fl	2017-2018	
	B2_Residential	16,000 gsf/fl(80 DU's)	2018-2019	0.7 acres
	<b>Retail</b>	<b>10,000 gsf</b>		
	B3_Residential	12,000 gsf/fl(30 DU's)	2019-2020	0.8 acres (B3 + B4)
	<b>Retail</b>	<b>8,000 gsf</b>		
	B4_Residential	14,000 gsf/fl(50 DU's)	2018-2020	
	<b>Retail</b>	<b>10,000 gsf</b>		
B5_Residential	40,000 gsf/fl(50 DU's)	2018-2020	2.0 Acres	
<b>Retail</b>	<b>120,000gsf</b>			
Block 'C'	C1_Residential East Village	81 DU's	2018-2019	4.2 acres
	<b>Retail</b>	<b>4,000 gsf</b>	2017-2019	
	C2_Retail	<b>38,000 gsf</b>	2018-2020	2.4 acres
Block 'D'	D1_Residential	27,000 gsf/fl(50 DU's)	2018-2020	4.5 acres (D1+ D2+D3)
	<b>Retail</b>	<b>36,000 gsf</b>		
	D2_Residential	13,000 gsf/fl(25 DU's)	2018-2020	
	<b>Retail</b>	<b>19,000 gsf</b>		
	D3_Hotel	12,000 gsf/fl(100 rms)	2022-2023	
<b>Retail</b>	<b>5,000 gsf</b>			
D4_Residential	42,000 gsf/fl(120 DU's)	2018-2021	2.3 acres	
Block 'E'	E1_Retail	<b>20,000 gsf</b>	2018-2019	4.4 acres (E1+E2+E3)
	E2_Retail	<b>38,000 gsf</b>	2018-2019	
	E3_Retail	<b>42,000 gsf</b>	2018-2019	
	E4_Residential West Vil.South	180 DU's	2018-2019	2.5 acres(Part)
Block 'F'	F1_Residential West Vil.North	84 DU's	2019-2022	5.8 acres(Part)
TOTAL	Residential	750 DU's		
	Hotel	100 Rooms		
	<b>Retail</b>	<b>350,000 gsf</b>		

Source: Carousel District Specific Plan (2017)

# Project Sites

- Pilot project will focus on 7 blocks for redevelopment
- Redevelopment opportunity sites?

## EXISTING CONDITIONS INVENTORY

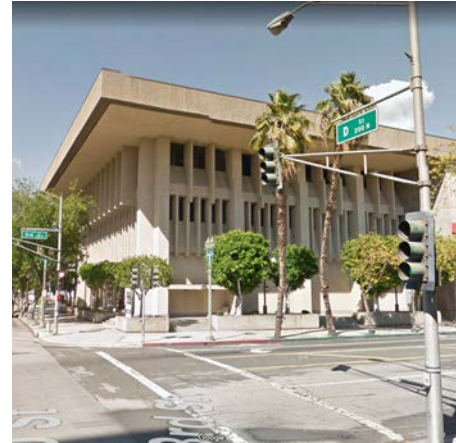
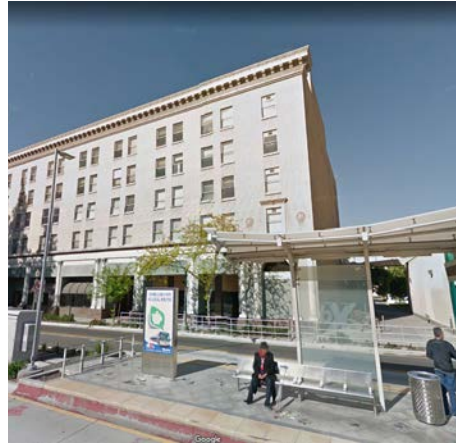




# Architectural Character and Photo Inventory

## EXISTING CONDITIONS INVENTORY

- Mix of building types includes:
- Historic
- Mid-Century Modern
- Institutional
- Contemporary
- Traditional Main Street Retail
- SbX and Transit Center







# HQTA Toolkit

HIGH QUALITY TRANSIT AREA  
PILOT PROJECT

Southern California  
Association of Governments

March 2019





## Acknowledgments

### Southern California Association of Governments (SCAG)

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Director of Planning  
Orlando Gonzalez, Senior Urban Designer  
Elaine Carbrey, AIA, AICP, Associate Partner  
Kamille Parks, Urban Designer/Planner

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Judith Taylor, Principal  
Riddhi Chakraborty, Analyst

### Iteris (Transportation)

Viggen Davidian, PE, Vice President  
Deepak Kaushik, PE, Senior Transportation  
Engineer

# HQTA Toolkit

## HIGH QUALITY TRANSIT AREA PILOT PROJECT

### Southern California Association of Governments

March 2019



The preparation of this report was financed in part through grants from the Federal Transit Administration, U.S. Department of Transportation. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

Additionally, the contents of this report reflect the views of the author who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of SCAG or DOT. This report does not constitute a standard, specification, or regulation.

## In this Toolkit

The HQTA Toolkit is designed to implement Transit-Oriented Development (TOD) within the Region’s HQTAs. An outline for the Toolkit is presented below:

### PART 1 Introduction

The HQTA Pilot Project offers technical assistance and planning services to station areas that have a high potential for transit-supportive development patterns and future growth.

### PART 2 Toolkit

The Toolkit includes contemporary best practices for TODs, open space, and complete street projects that are tailored to the desired place types for a HQTA. Those toolkit options are organized as follows:

### PART 3 Additional Resources

Federal, regional, and local funding sources for complete street, open space and placemaking, and TOD projects are provided in addition to other resources Cities may find useful in evaluating their own HQTAs.

**Purpose and Introduction to HQTAs**

pg. I-2



**A - Complete Streets**

pg. II-A-1



**A - Funding Sources**

pg. III-A-1



**SCAG Region Issues, Goals, and Objectives**

pg. I-4



**B - Open Space / Placemaking**

pg. II-B-1

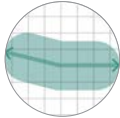


**B - Additional Resources**

pg. III-B-1

**Benefits and Components of TODs**

pg. I-6



**C - Building Types & Precedents**

pg. II-C-1



**HQTA Place Types**

pg. I-9





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## Introduction

Implementation of the Station Area Vision is accomplished through specific physical improvements. The HQTa Toolkit 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.

### How to Use this Toolkit

#### Purpose

#### Issues, Goals, and Objectives for the SCAG Region

#### Benefits and Components of TODs

#### HQTa Place Types





## Purpose

### Vision

In the 2016 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS), the Southern California Association of Governments (SCAG) established a vision for future investment in the communities of the Southern California region: **to develop sustainable communities where people enjoy increased mobility, greater economic opportunity, and a higher quality of life.** This vision was developed through years of community planning, incorporating all the diverse physical forms and individual perspectives of the region. The core physical elements of that vision include:

- Compact and walkable communities, seamlessly connected with public transportation, that allow people to live active and healthy lifestyles;
- Well maintained transportation networks that effectively utilize public tax dollars;
- Sustainable, multi-modal transportation system that improves air quality and reduces the region’s climate change contribution; and,
- Housing supply that is sufficient to meet the needs of a growing population, affordable, and provides equal economic opportunity to diverse neighborhoods across the region.

### Implementing the Vision within High Quality Transit Areas

At the heart of this vision is to concentrate transit-oriented development (TOD) within High Quality Transit Areas (HQTAs). A HQTA is defined as an area along transit corridors or near major transit stations that have, or will have in place, 15 minute service, or better, during peak commuting hours; SCAG identified these areas through the development of the 2016/2040 RTP/SCS. Between 2016 and 2040, 46 percent of new housing and 55 percent of new employment within the six county SCAG region is expected to be developed within HQTAs. Though well-served by transit, an HQTA may not necessarily be a transit-oriented community (TOC). TOCs are based on the principles of TODs, but place greater emphasis on significant changes in land use patterns, socioeconomic outcomes, and travel patterns at the neighborhood scale. To achieve the regional vision, communities must make infrastructure investments that support walkable, compact communities that integrate land use and transportation planning for a better functioning built environment.

These investments in active transportation and higher density development should be made through sensitive design that responds to existing physical conditions of the surrounding context - focusing TOD investments to make areas more walkable while complementing existing community character. Sensitive designed TODs can preserve existing development patterns and neighborhood character while providing a balance of modes and housing choices.

### Purpose of the Toolkit

In 2017, SCAG launched the first round of the HQTA Pilot Project. The Pilot Project offers technical assistance and planning services to station areas that have a high potential for transit-supportive development patterns and future growth. Once Station Area Vision Plans are created, SCAG will work with Pilot Project jurisdictions to track the progress towards meeting a variety of regional objectives, such as lower greenhouse gas emissions and increased transit ridership.

Generally, this Toolkit is a tool for guiding the development of Station Area Vision Plans and their implementation. It includes strategies and investments for people who walk, bike, and take public transportation, while balancing considerations for drivers and other modes. Specifically, this document provides a range of physical investments and strategies to construct, and measure the impacts of well-designed TODs. The individual physical elements addressed by this document are identified in a typical

half-mile station area diagram shown on the following page.

This Toolkit is meant to be used as a resource for SCAG, municipalities, and individual developers to build quality TOD within the region’s HQTAs in order to address a number of regional issues and achieve a number of regional goals and objectives; these issues, goals, and objectives are enumerated on the following pages.

The HQTA Toolkit is a “living document” and is designed to be regularly updated with additional TOD amenity precedents over time.



## High Quality Transit Areas

The first step in planning for TOD is to determine the location and limits of the HQTAs. A HQTAs is defined in the RTP/SCS generally as a walkable transit village or corridor, within one half-mile of a well-serviced transit stop or a transit corridor with 15-minute or better service frequency (headways) during peak commute hours. This definition of a HQTAs is based on the following Senate Bill (SB) 375 language, which provides the legal framework for funding of active transportation, TOD, and other infrastructure projects oriented towards reducing GHGs:

**Major Transit Stop:** A site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

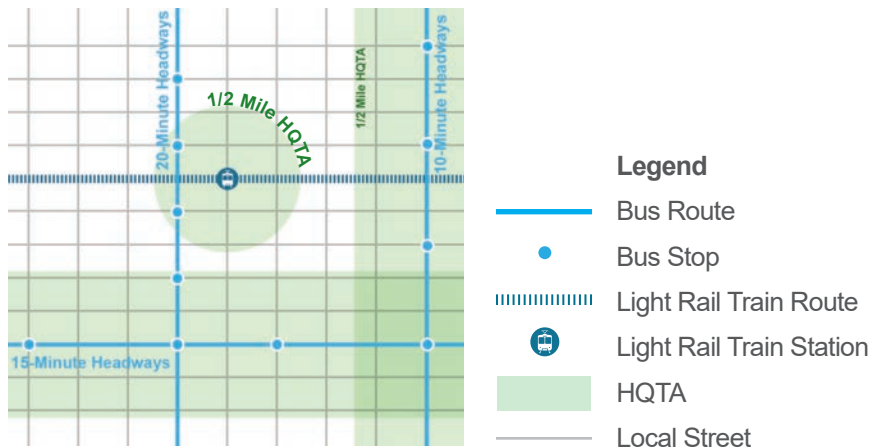
**High Quality Transit Corridor (HQTAs):** A corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

The figure below shows hypothetical HQTAs based on the SB 375 language for various transit route frequencies.

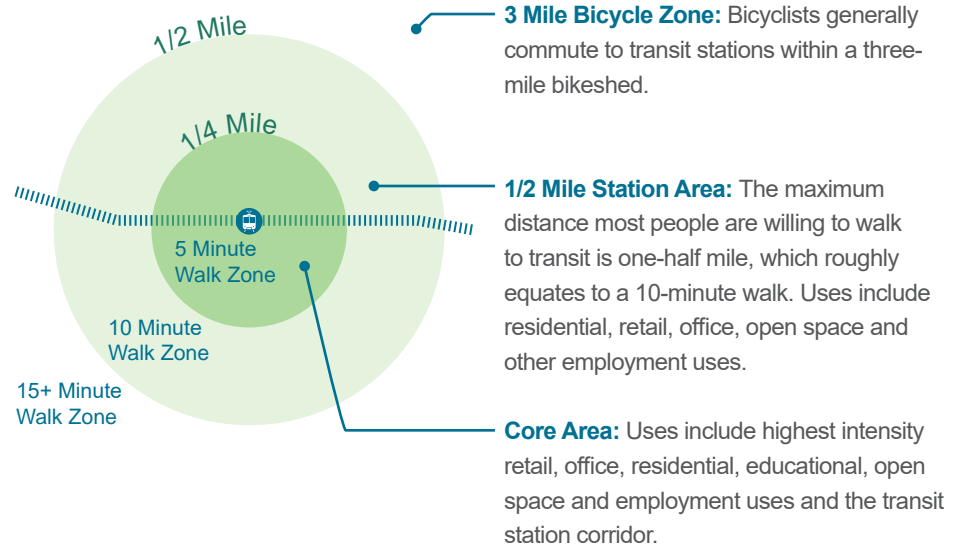
Within the HQTAs, there are individual zones that have implications for TOD planning. The HQTAs station/stop is surrounded by relatively high-intensity development, with intensity of development gradually reducing outwards to be compatible with lower-density uses as shown in the figure at right top.

The figure at right shows the location of all HQTAs within the SCAG region by 2040, which is based on the expected build-out of scheduled public transportation projects.

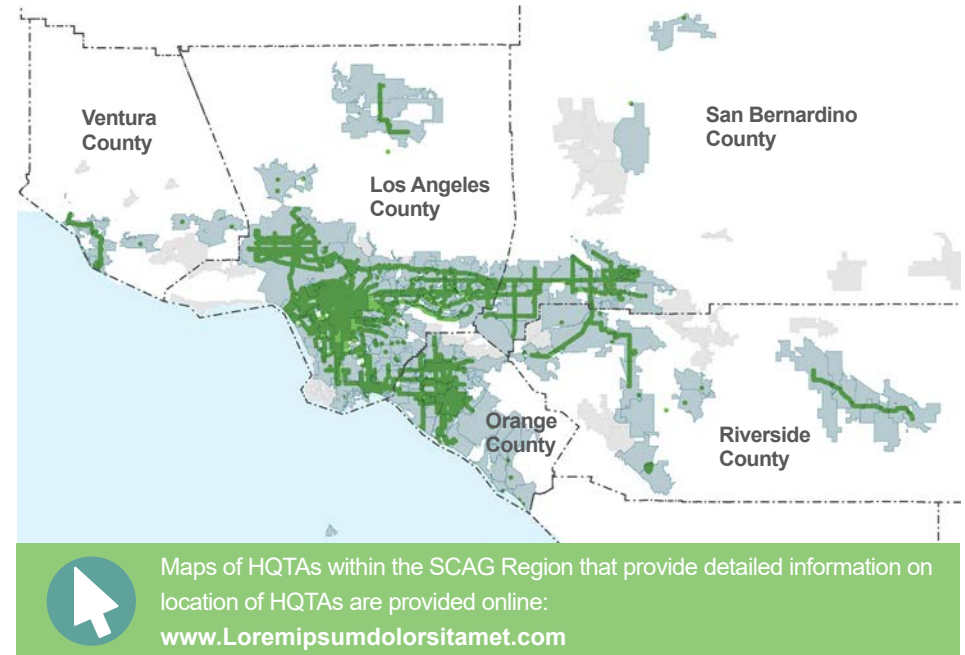
### Qualifying HQTAs based on Transit Frequencies



### HQTAs Zones



### Location of HQTAs in the SCAG Region



Note: Per the 2016/2040 RTP/SCS, there are no HQTAs identified for Imperial County.



## Issues in the SCAG Region

The vision set forth in the RTP/SCS addresses major issues facing the SCAG Region today:

- Environmental justice
- Affordability
- Population growth and displacement
- Air quality
- Economic development
- Transportation access and safety
- Goods movement
- Public health
- Climate change

All these issues facing the Region are interconnected. They are the consequence of past investments in sprawling development and auto-centric transportation infrastructure when land use and transportation planning were isolated disciplines. In hindsight, the auto-centric development patterns were made without consideration for the potential impacts to air quality, public health,

neighborhood fabric, and other factors. The new vision for the SCAG Region, centered on TODs within HQTAs integrates transit-supportive land uses with a variety of transportation options. A new urban development pattern applies the context and technologies of the 21st Century to produce walkable, affordable, healthy, sustainable, safe, and equitable communities.

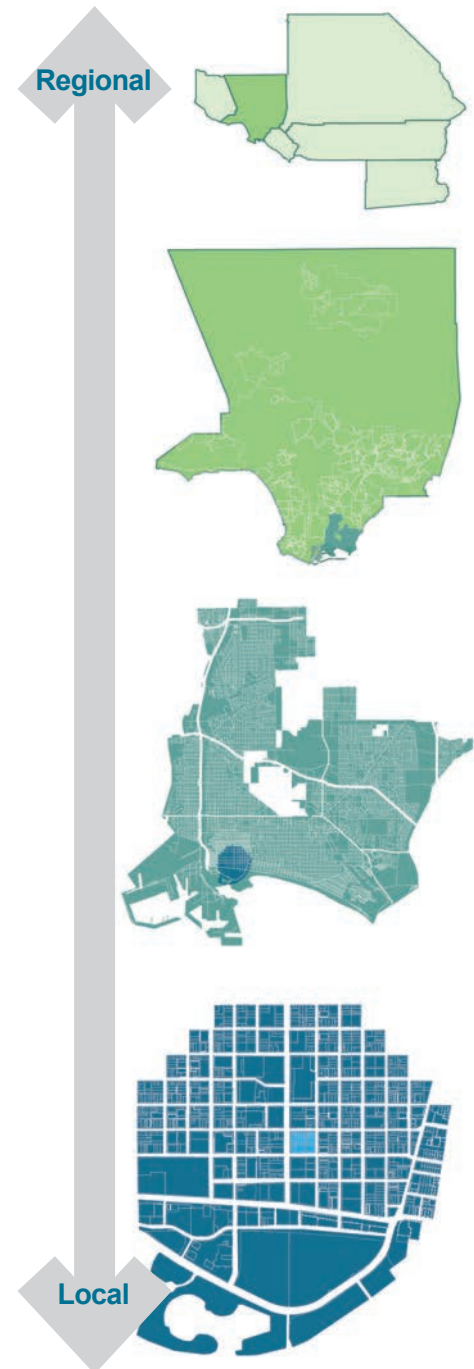
### Geographic Scales of TOD Planning

While major issues are perceived regionally, it is the individual parcels, blocks, and neighborhoods that produce the physical conditions that influence regional outcomes; they form the individual tiles of the regional mosaic. The same applies for the goals and objectives of the region. TODs occur at the individual scale where localized issues can match or be contrary to regional trends, but they are not isolated from its context. Understanding the value of how studying every scale impacts the success of TOD is

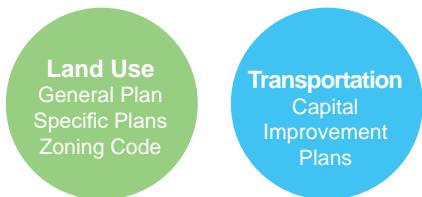
demonstrated through research from Center for Transit-Oriented Development (CTOD),

*“Planning for TOD occurs at the scale of the region, the corridor, the station area, and the land parcel, and these separate levels of planning should be coordinated to achieve the most successful outcomes. Planning at the regional scale serves to integrate regional goals, such as decreasing traffic congestion and improving public health, with regional contexts, such as a consideration of population growth and the location of major employment centers. Planning for TOD most often takes place at the station area level, and this is where it’s easiest to understand local benefits such as reduced transportation costs for residents, and the creation of a sense of place and community. Development projects are planned at the scale of the [individual] land parcel.”*

This Toolkit will provide the tools to implement individual projects both public and private that improve both local and regional livability.



### Traditional Planning



### New Approach to Planning





## Goals and Objectives for the SCAG Region

### Goals

The following are the broad goals of the 2016/2040 RTP/SCS designed to address the primary issues facing the SCAG Region, which also apply to this Toolkit:

- Align plan investments and policies with improving regional economic development
- Maximize mobility and accessibility for all people and goods in the region
- Ensure travel safety and reliability
- Preserve and ensure a sustainable regional transportation system
- Maximize productivity
- Protect the environment and health of the region’s residents by improving air quality and encouraging active transportation
- Actively encourage and create incentives for energy efficiency
- Encourage land use and growth patterns that facilitate transit and active transportation
- Maximize security of the regional transportation system



### Objectives and Metrics

The Pilot Project Vision Plans, guided by the strategies and investments contained in the Toolkit will help achieve the following 2016/2040 RTP/SCS objectives:

- 8 percent reduction in GHG emissions per capita by 2020, 18 percent reduction by 2035, and a 21 percent reduction by 2040 - compared to 2005 levels
- Improve regional air quality
- 4 percent increase in commute trips made by carpooling, active transportation (walking and biking) and public transit from current single occupant vehicle trips
- 7 percent reduction of vehicle miles traveled (VMT) per capita
- 17 percent reduction of vehicle hours (VHT) per capita for automobiles and light/medium duty trucks
- 1/3 increase in daily travel by public transit
- 39 percent reduction of delay on roadways per capita
- Create more than 351,000 jobs annually
- Reduce the amount of undeveloped (greenfield) lands by 23 percent
- Reduce the regional obesity rate from 26.3 percent to 25.6 percent in areas with land use changes

Once the Vision Plans are developed, SCAG will work with pilot project jurisdictions to track the progress of pilot projects towards meeting regional objectives through a set of metrics. Pilot projects that successfully reduce GHGs or meet other objectives will be held up as models for other station areas with similar characteristics. Taken together, successful pilot projects will help to address the major issues facing the SCAG Region today.

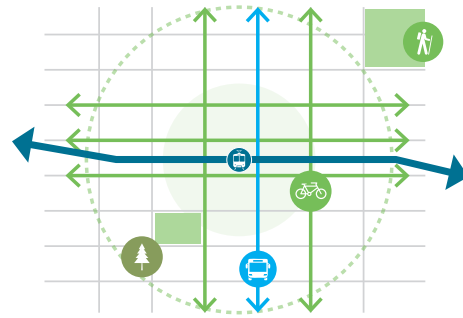
## Benefits of TODs

Transit-Oriented Development (TOD) is a form of urban development that is different than urban development that occurred during the sprawl that ensued after WWII. The postwar population boom led to a sprawling development pattern that was enabled by the construction of freeways and inefficient infrastructure and land use investments. TOD can accommodate inevitable future population and job growth that addresses the issues we face today, and focuses that new urban development in HQTAs that preserve and improve the quality of existing communities.

A new population boom offers the opportunity to reshape how the region grows. According to estimates by SCAG, Los Angeles County alone will add up to 1 million new residents by 2030. TODs are equipped to accommodate future growth while largely preserving existing neighborhood character.

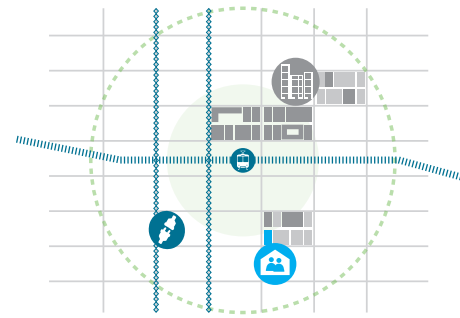
The illustration at right lists the numerous benefits of TODs, which have been grouped into the categories of environment, economic, and social.

### ENVIRONMENT



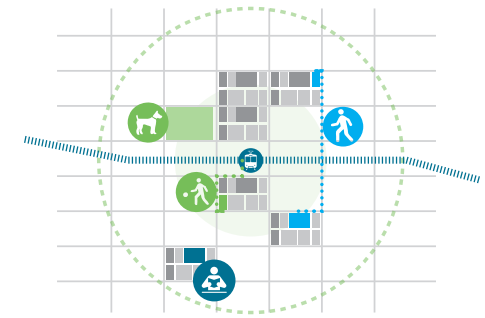
- Increased transit ridership
- Reduced VMT
- Reduced GHG
- Improved Air Quality
- Conservation of land and open space

### ECONOMIC



- Catalyst for economic development
- Redevelopment of vacant and underutilized properties
- Increased property value
- Decreased infrastructure costs
- Revenue for transit systems
- Reduced household spending on transportation
- Increase in affordable housing

### SOCIAL



- Increased housing and employment choices
- Greater mobility choices
- Health benefits
- Enhanced sense of community
- Enhanced public safety
- Increased quality of life

## Components of TODs



A typical HQTAs should include a mixture of housing, office, retail and/or other commercial development and amenities integrated into a walkable neighborhood and located within a half-mile of quality public transportation.

- 1 Mix of Land Uses / Higher Densities and Intensities**  
*GOAL: Encourage transit-supportive uses at higher densities and intensities in walking distance to transit stations/stops*  
 Design for flexibility to allow for future conversion to other uses  
 Provide for convenience retail that serves transit commuters
- 2 Street Design / Active Transportation**  
*GOAL: Balance the provision of pedestrian, cyclist, transit, and single-occupancy vehicles (SOVs) infrastructure by promoting “complete streets”*  
 Design amenities for all modes (shelters, storage, etc.)  
 Design streets with pedestrian and cyclist safety in mind  
 Employ traffic-calming devices to reduce collisions
- 3 Buildings / Urban Design**  
*GOAL: Promote attractive, pedestrian-friendly buildings that contribute to the character of a district and have active ground floor uses*  
 Promote building articulation and variety  
 Use a diverse palette of materials  
 Locate parking behind buildings and retail along streets  
 Design for flexibility to allow for future conversion to other uses
- 4 Parking: Strategies**  
*GOAL: Reduce reliance upon SOVs by managing the supply and demand of parking*  
 Shared, district-wide parking  
 Reduced parking supply  
 Reliance upon multiple modes to address mobility needs  
 Appropriately-priced parking to manage demand  
 Car-share, transit and cycling incentive programs
- 5 Open Space: / Placemaking**  
*GOAL: Design for active and passive recreational opportunities*  
 Privately-owned, publicly-accessible public spaces (POPs)  
 Publicly-owned civic spaces for passive + active recreation  
 Public spaces of a wide variety of types and programming



## TOD Performance Metrics

Baseline conditions for each HQTAs are established using the most recent version of the SCAG model (2016 RTP/SCS). Evaluation of the Pilot Project Buildout conditions includes modification to the SCAG model's Transportation Analysis Zones (TAZs) to represent the land use forecast to be built.

Each analysis of the Pilot Project Buildout proposed by the HQTAs Vision Plan used the **number of jobs, housing units, and population** to estimate the following metrics:

**Vehicle Miles Traveled (VMT) per capita** is a measurement of the number of vehicle trips multiplied by the distance of those trips (in terms of miles traveled). The total VMT (generated by the TAZ's within the HQTAs) is divided by the population within the HQTAs area to determine the VMT per capita. Data from all TAZ's within, or overlapping with, the HQTAs boundaries is included in the calculation.

**Vehicle Hours Traveled (VHT) per capita** is a measurement of the number of vehicle

trips multiplied by the duration of those trips (in terms of hours traveled). The total VHT (generated by the TAZ's within the HQTAs) is divided by the population within the HQTAs area to determine the VHT per capita. Data from all TAZ's within, or overlapping with, the HQTAs boundaries is included in the calculation.

**Travel mode share** within the HQTAs is calculated by obtaining the total origins and destinations (auto and transit) for each zone within the HQTAs, and calculating the travel

mode share based on raw model output data.

**Public transit usage** is calculated as the number of daily transit trips within the HQTAs.


**Vehicular delay** is calculated as the total daily vehicle delay on all roadway links within the HQTAs.

**Number of Jobs**



Transit-oriented communities have active local businesses and attract new economic development.

**Housing Units**




A higher density of housing units along transit routes increases residents' access to alternative modes of travel.

**Population**




Cities with population densities concentrated along transit routes are healthier, more economically stable, and produce less carbon emissions.

**Vehicular Delay**




A reduction in vehicular delay can reduce GHG emissions from idling cars.

**Travel Mode Share**




Streets designed for all modes of travel can reduce occurrences and severity of traffic collisions.

**Public Transit Usage**




An increase in public transit ridership reduces the number of single-occupancy vehicles on the road and provides revenue for cities.

**Vehicular Miles Traveled (VMT)**



A reduction in VMT eases traffic congestion, promotes active transportation, and reduces GHG emissions.

**Vehicular Hours Traveled (VHT)**



A reduction in VHT promotes mental health in commuters by reducing commute fatigue.

## HQTA Place Types

During the generation of growth scenarios for the 2016 RTP/SCS, SCAG developed a set of 35 place types that are based on observations of station areas in California and throughout the United States. Each place type is embedded with assumptions for density/intensity, land use type and mix, built form, and connectivity, each of which can be quantified and compared across many different stations. Place types are organized into “urban,” “compact,” and “standard.”

These place types recognize the rich diversity and wide variety of communities in the SCAG region. The goal of the HQTA program is not to replicate the same TOD model for each community, but rather to build upon the unique attributes of each city. Through this approach, each community can identify its strengths and opportunities to create compact, livable, walkable communities. Communities can refer to these place types as they define the current conditions and desired qualities of their HQTA.

Progress towards meeting these goals will be tracked through a series of targets and metrics identified in each Vision Plan. These targets include density, connectivity, primary mode of travel, and greenhouse gas reductions, among others. Of the 35 place types identified by SCAG, 17 meet or exceed density thresholds that will promote the use of high quality transit. These are listed in **bold** below. A more complete profile of each of the 17 place types is presented on the following pages. A summary table of metrics for each place type can be found in the “Additional Resources” section of this Toolkit.

### Urban

- **Urban Mixed Use**
- **Urban Residential**
- **Urban Commercial**
- **City Mixed Use**
- **City Residential**
- **City Commercial**

### Compact

- **Town Mixed Use**
- **Town Residential**
- **Town Commercial**
- **Village Mixed Use**
- **Village Residential**
- **Village Commercial**
- Neighborhood Residential
- Neighborhood Low

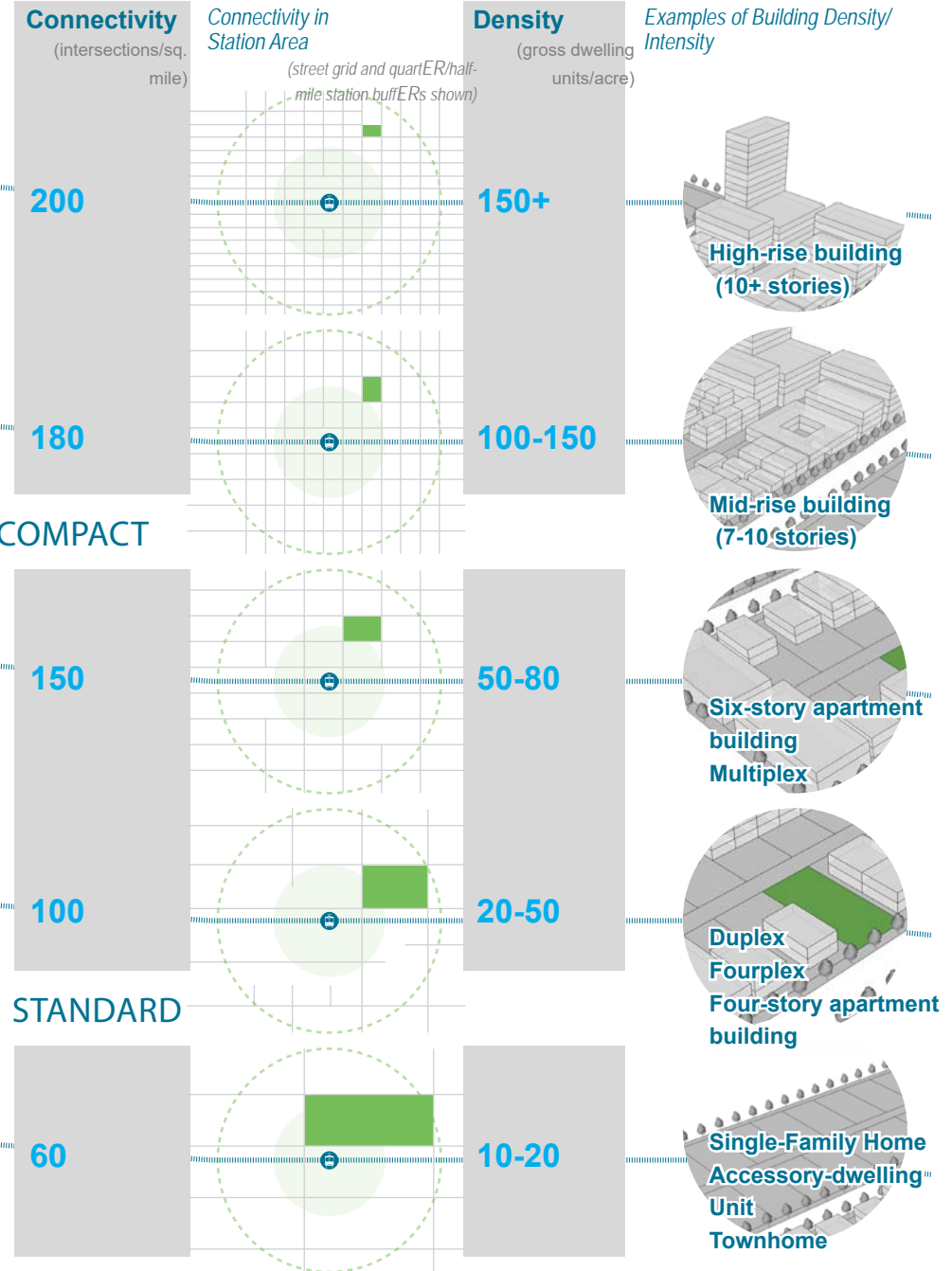
### Other

- **Campus / University**
- Institutional

### Standard

- **Office Focus**
- Mixed Office and R&D
- Office / Industrial
- Industrial Focus
- Low-Density Employment Park
- **High Intensity Activity Center**
- Mid Intensity Activity Center
- Low Intensity Retail-Centered Neighborhood
- Retail: Strip Mall / Big Box
- **Industrial / Office / Residential Mix High**
- Industrial / Office / Residential Mix Low
- **Suburban Multi-family**
- Suburban Mixed Use Residential
- Residential Subdivision
- Large Lot Residential Area
- Rural Residential
- Rural Ranchettes
- Rural Employment
- Open Space

## URBAN





# HQTA Place Types

## Urban Mixed Use



Land Use Mix		Residential Mix	
Residential	18%	SF Large Lot	0%
Employment	16%	SF Small Lot	0%
Mixed Use	45%	Townhome	0%
Open Space/Civic	21%	Multifamily	100%
Built Environment		Employment Mix	
Intersections per mi <sup>2</sup>	200	Office	80%
Average Floors	23	Retail	20%
Floors Range	15 – 100	Industrial	0%
Total Net FAR	9.0		
Gross Density Range (per acre)		Average Density (per acre)	
Household	40-500+	Household	85
Employee	50-500+	Employee	266

**Description**  
Urban Mixed Use districts are exemplified by a variety of intense uses and building types. Typical buildings are between 10 and 40+ stories tall, with offices and/or residential uses and ground-floor retail space. Parking is usually structured below or above ground. Workers, residents, and visitors are well served by transit, and can walk or bicycle for many of their transportation needs.


## City Mixed Use



Land Use Mix		Residential Mix	
Residential	28%	SF Large Lot	0%
Employment	17%	SF Small Lot	0%
Mixed Use	35%	Townhome	3%
Open Space/Civic	20%	Multifamily	97%
Built Environment		Employment Mix	
Intersections per mi <sup>2</sup>	200	Office	60%
Average Floors	7	Retail	40%
Floors Range	3 – 40	Industrial	0%
Total Net FAR	3.4		
Gross Density Range (per acre)		Average Density (per acre)	
Household	10-75	Household	44
Employee	25-165	Employee	85

**Description**  
City Mixed Use areas are transit-oriented and walkable, and contain a variety of uses and building types. Typical buildings are between 5 and 30 stories tall, with ground-floor retail space, and offices and/or residences on the floors above. Parking is usually structured below or above ground.

## Urban Residential



Land Use Mix		Residential Mix	
Residential	64%	SF Large Lot	0%
Employment	4%	SF Small Lot	0%
Mixed Use	12%	Townhome	0%
Open Space/Civic	21%	Multifamily	100%
Built Environment		Employment Mix	
Intersections per mi <sup>2</sup>	200	Office	22%
Average Floors	18	Retail	78%
Floors Range	5 – 60	Industrial	0%
Total Net FAR	9.0		
Gross Density Range (per acre)		Average Density (per acre)	
Household	75-500+	Household	131
Employee	0-50+	Employee	44

**Description**  
The most intense residential-focused type, Urban Residential areas are typically found within or adjacent to major downtowns. They include high- and mid-rise residential towers, with some ground-floor retail space. Parking usually structured below or above ground. Residents are well served by transit, and can walk or bicycle for many of their daily needs.

## City Residential



Land Use Mix		Residential Mix	
Residential	65%	SF Large Lot	0%
Employment	4%	SF Small Lot	0%
Mixed Use	11%	Townhome	3%
Open Space/Civic	20%	Multifamily	97%
Built Environment		Employment Mix	
Intersections per mi <sup>2</sup>	200	Office	40%
Average Floors	7	Retail	60%
Floors Range	5 – 40	Industrial	0%
Total Net FAR	2.9		
Gross Density Range (per acre)		Average Density (per acre)	
Household	35-75	Household	58
Employee	0-17	Employee	14

**Description**  
An dense residential-focused type, City Residential is dominated by mid- and high-rise residential towers, with some ground-floor retail space. Parking is usually structured, below or above ground. Residents are well served by transit, and can walk or bicycle for many of their daily needs.

## Urban Commercial



Land Use Mix		Residential Mix	
Residential	1%	SF Large Lot	0%
Employment	4%	SF Small Lot	0%
Mixed Use	12%	Townhome	0%
Open Space/Civic	21%	Multifamily	100%
Built Environment		Employment Mix	
Intersections per mi <sup>2</sup>	200	Office	93%
Average Floors	15	Retail	7%
Floors Range	15 – 100	Industrial	0%
Total Net FAR	6.0		
Gross Density Range (per acre)		Average Density (per acre)	
Household	0-40	Household	8
Employee	250-500+	Employee	402

**Description**  
Urban Commercial areas are typically found within major Central Business Districts. They are exemplified by mid- and high-rise office towers. Typical buildings are between 15 and 40+ stories tall, with ground-floor retail space, and offices on the floors above. Parking is usually structured below or above ground; workers tend to arrive by transit, foot or bicycle in large numbers.

## City Commercial



Land Use Mix		Residential Mix	
Residential	1%	SF Large Lot	0%
Employment	82%	SF Small Lot	0%
Mixed Use	4%	Townhome	0%
Open Space/Civic	14%	Multifamily	100%
Built Environment		Employment Mix	
Intersections per mi <sup>2</sup>	200	Office	77%
Average Floors	7	Retail	23%
Floors Range	5 – 40	Industrial	0%
Total Net FAR	3.1		
Gross Density Range (per acre)		Average Density (per acre)	
Household	0-10	Household	4
Employee	90-250	Employee	200

**Description**  
The central business districts of most cities contain areas exemplary of City Commercial, with many mid- and high-rise office towers and government buildings. Typical structures are between 4 and 40 stories tall, with ground-floor retail space, and offices on the floors above. Parking is usually structured, though many workers arrive by transit, foot, or bicycle.



# HQTA Place Types

## Town Mixed Use



Land Use Mix	Residential Mix
Residential 26%	SF Large Lot 0%
Employment 20%	SF Small Lot 0%
Mixed Use 29%	Townhome 0%
Open Space/Civic 25%	MultiFamily 100%

Built Environment	Employment Mix
Intersections per mi <sup>2</sup> 200	Office 75%
Average Floors 4	Retail 25%
Floors Range 2-8	Industrial 0%
Total Net FAR 1.9	

Gross Density Range (per acre)	Average Density (per acre)
Household 7-35	Household 21
Employee 25-70	Employee 50

**Description**  
Town Mixed Use areas are walkable mixed-use neighborhoods, such as the mixed-use core of a small city or transit oriented development, with a variety of uses and building types. Typical buildings are between 3 and 8 stories tall, with ground-floor retail space, and offices and/or residences on the floors above. Parking is usually structured, above or below ground.

## Village Mixed Use



Land Use Mix	Residential Mix
Residential 43%	SF Large Lot 15%
Employment 14%	SF Small Lot 15%
Mixed Use 14%	Townhome 29%
Open Space/Civic 28%	MultiFamily 41%

Built Environment	Employment Mix
Intersections per mi <sup>2</sup> 220	Office 42%
Average Floors 3	Retail 58%
Floors Range 2-6	Industrial 0%
Total Net FAR 1.0	

Gross Density Range (per acre)	Average Density (per acre)
Household 5-12	Household 10
Employee 5-40	Employee 14

**Description**  
Village Mixed Use areas are the walkable and transit accessible mixed-use cores of traditional neighborhoods. Typical buildings are between 2 and 6 stories tall, with ground-floor retail space, and offices and/or residences on the floors above. Parking is typically structured, tucked under, or placed behind buildings so that it does not detract from the pedestrian environment.

## Town Residential



Land Use Mix	Residential Mix
Residential 68%	SF Large Lot 0%
Employment 0%	SF Small Lot 0%
Mixed Use 10%	Townhome 47%
Open Space/Civic 22%	MultiFamily 53%

Built Environment	Employment Mix
Intersections per mi <sup>2</sup> 220	Office 47%
Average Floors 3	Retail 53%
Floors Range 2-8	Industrial 0%
Total Net FAR 1.2	

Gross Density Range (per acre)	Average Density (per acre)
Household 12-35	Household 18
Employee 0-25	Employee 12

**Description**  
Containing a mix of townhomes, condominiums and apartments (and occasionally small-lot single family homes), Town Residential is characterized by dense residential neighborhoods interspersed with occasional retail areas. Typical buildings are 2-5 stories tall, with limited off-street parking; residents tend to use transit, walking and bicycling for many of their transportation needs.

## Village Residential



Land Use Mix	Residential Mix
Residential 74%	SF Large Lot 26%
Employment 0%	SF Small Lot 26%
Mixed Use 1%	Townhome 49%
Open Space/Civic 26%	MultiFamily 0%

Built Environment	Employment Mix
Intersections per mi <sup>2</sup> 180	Office 100%
Average Floors 3	Retail 0%
Floors Range 2-5	Industrial 0%
Total Net FAR 0.9	

Gross Density Range (per acre)	Average Density (per acre)
Household 8-12	Household 10
Employee 0-5	Employee 2

**Description**  
Containing a mix of single-family homes on small lots and townhomes, Village Residential is characterized by traditional neighborhoods, designed to be supportive of transit service, walking and bicycling. Typical buildings are 2-3 stories tall, with small yards and an active focus on the public realm.

## Town Commercial



Land Use Mix	Residential Mix
Residential 1%	SF Large Lot 0%
Employment 69%	SF Small Lot 0%
Mixed Use 17%	Townhome 0%
Open Space/Civic 14%	MultiFamily 100%

Built Environment	Employment Mix
Intersections per mi <sup>2</sup> 200	Office 68%
Average Floors 3	Retail 32%
Floors Range 2-8	Industrial 0%
Total Net FAR 1.8	

Gross Density Range (per acre)	Average Density (per acre)
Household 0-7	Household 5
Employee 60-90	Employee 75

**Description**  
Equivalent to the center of a traditional town, or a more employment-focused transit-oriented development, Town Commercial contains a mix of commercial buildings set in a walkable context. Typical structures are between 2 and 8 stories tall, with ground-floor retail, and offices, services, and some residential uses on upper floors.

## Village Commercial



Land Use Mix	Residential Mix
Residential 0%	SF Large Lot 0%
Employment 61%	SF Small Lot 0%
Mixed Use 7%	Townhome 0%
Open Space/Civic 32%	MultiFamily 100%

Built Environment	Employment Mix
Intersections per mi <sup>2</sup> 230	Office 49%
Average Floors 2	Retail 51%
Floors Range 0	Industrial 0%
Total Net FAR 1.2	


Gross Density Range (per acre)	Average Density (per acre)
Household 0-5	Household 2
Employee 1-60	Employee 40

**Description**  
Equivalent to the center of a small town or district, or a lower-intensity employment-focused transit-oriented development, Village Commercial contains a mix of buildings set in a walkable context. Typical structures are between 2 and 5 stories tall, with some ground-floor retail, and offices, services, and some residential on upper floors.



# HQTA Place Types

## Suburban Multifamily



Land Use Mix		Residential Mix	
Residential	87%	SF Large Lot	0%
Employment	0%	SF Small Lot	0%
Mixed Use	0%	Townhome	11%
Open Space/Civic	13%	MultiFamily	89%
Built Environment		Employment Mix	
Intersections per mi <sup>2</sup>	90	Office	85%
Average Floors	3	Retail	15%
Floors Range	2-5	Industrial	0%
Total Net FAR	1.2		
Gross Density Range (per acre)		Average Density (per acre)	
Household	18-150+	Household	32
Employee	0-6	Employee	2

**Description**  
 Predominantly containing apartments, condos, and town homes, Suburban Multifamily represents developments that may have internal walking paths but are set in an automobile-oriented context. While densities can be high enough to support bus transit, residents are likely to drive for most trips. Typical buildings are 2-5 stories tall, surrounded by surface parking lots.

## High Intensity Activity Center



Land Use Mix		Residential Mix	
Residential	14%	SF Large Lot	0%
Employment	37%	SF Small Lot	0%
Mixed Use	41%	Townhome	6%
Open Space/Civic	8%	MultiFamily	94%
Built Environment		Employment Mix	
Intersections per mi <sup>2</sup>	130	Office	20%
Average Floors	5	Retail	80%
Floors Range	5 - 40	Industrial	0%
Total Net FAR	2.5		
Gross Density Range (per acre)		Average Density (per acre)	
Household	0.5-200+	Household	24
Employee	3-250+	Employee	69

**Description**  
 High Intensity Activity Centers include a mix of moderate to intense densities of retail, office, and residential uses. They are often anchored by major regional retail centers or office parks, and while they can contain a robust mix of uses, they are most often oriented within an auto-oriented and non-walkable street and land use pattern. Parking can be structured and/or provided on surface lots.

## Industrial/Office/Residential Mixed High



Land Use Mix		Residential Mix	
Residential	58%	SF Large Lot	0%
Employment	36%	SF Small Lot	0%
Mixed Use	0%	Townhome	4%
Open Space/Civic	6%	MultiFamily	96%
Built Environment		Employment Mix	
Intersections per mi <sup>2</sup>	60	Office	73%
Average Floors	4	Retail	16%
Floors Range	1 - 17	Industrial	11%
Total Net FAR	2		
Gross Density Range (per acre)		Average Density (per acre)	
Household	18-200+	Household	45
Employee	3-250+	Employee	42

**Description**  
 Industrial/Office/Residential Mixed High is characterized by a wide-ranging, intensely developed mix of uses located in close proximity and set in an automobile-oriented context. Building heights can range from 1 to 15+ stories, and uses can include but are not limited to industrial, warehouses, offices, residential, and retail.

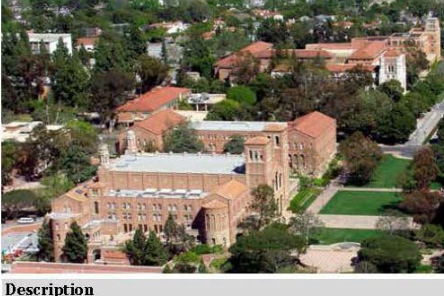
## Office Focus



Land Use Mix		Residential Mix	
Residential	0%	SF Large Lot	0%
Employment	82%	SF Small Lot	0%
Mixed Use	0%	Townhome	0%
Open Space/Civic	18%	MultiFamily	0%
Built Environment		Employment Mix	
Intersections per mi <sup>2</sup>	45	Office	93%
Average Floors	4	Retail	2%
Floors Range	2 - 9	Industrial	5%
Total Net FAR	1.1		
Gross Density Range (per acre)		Average Density (per acre)	
Household	0	Household	0
Employee	35-150+	Employee	65

**Description**  
 Representing the most intense auto-oriented single-use office areas, Office Focus is characterized by mid and high-rise office towers. Typical buildings are between 2 and 9 stories tall. Parking can be either structured or provided on surface lots. Workers tend to arrive by auto, though densities are high enough to support suburban transit service.

## Campus/University



Land Use Mix		Residential Mix	
Residential	32%	SF Large Lot	0%
Employment	2%	SF Small Lot	0%
Mixed Use	0%	Townhome	0%
Open Space/Civic	67%	MultiFamily	100%
Built Environment		Employment Mix	
Intersections per mi <sup>2</sup>	150	Office	64%
Average Floors	8	Retail	36%
Floors Range	3 - 17	Industrial	0%
Total Net FAR	1.7		
Gross Density Range (per acre)		Average Density (per acre)	
Household	1-50	Household	31
Employee	10-100	Employee	22

**Description**  
 College/University areas tend to be internally walkable, though they can be located in either a walkable or auto-oriented context. Buildings can range from 1 to 20+ stories, depending on the design of the campus. Parking may be plentiful or restricted; housing may be provided on-site in large amounts, or students may commute from homes in other locations.

Source: 2016 RTP/SCS

## 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

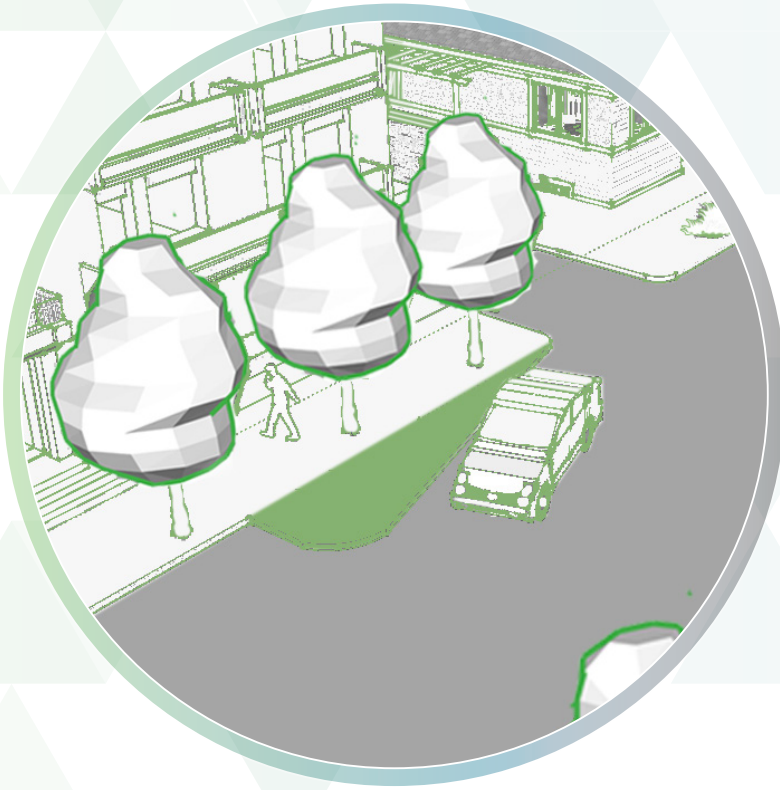
Street Design

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

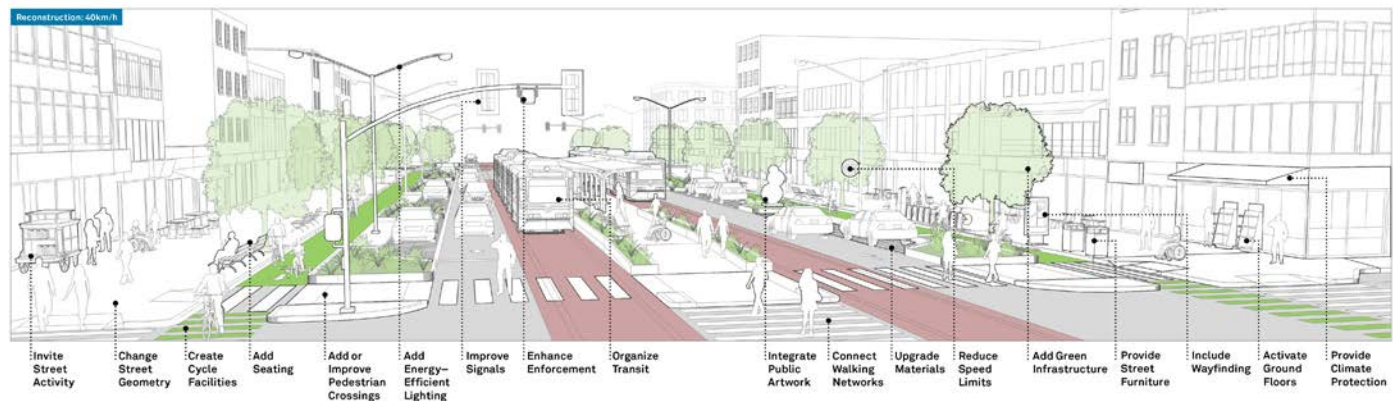
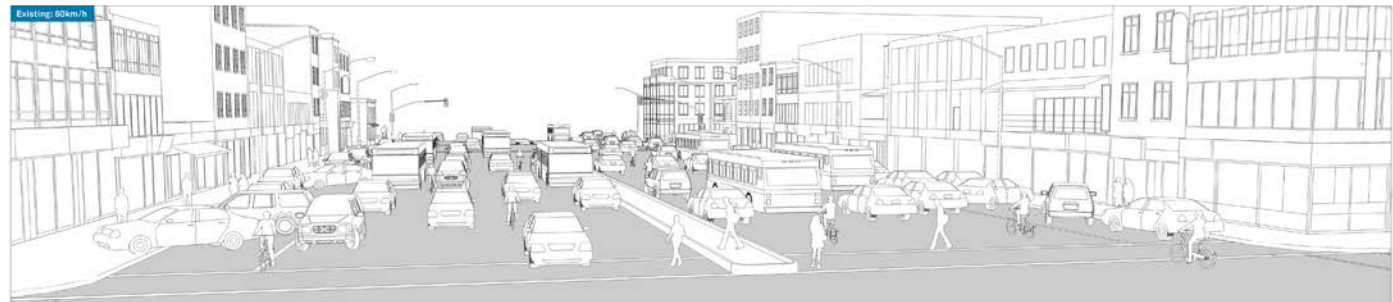
- Chicane
- Street trees
- Treelet
- Greenway Planters / Bioswales
- Permeable Paving
- Lighting

### 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
Amenities	<b>Wayfinding Signage (excludes monument signage)</b>	\$2,000	\$3,000	each
	<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

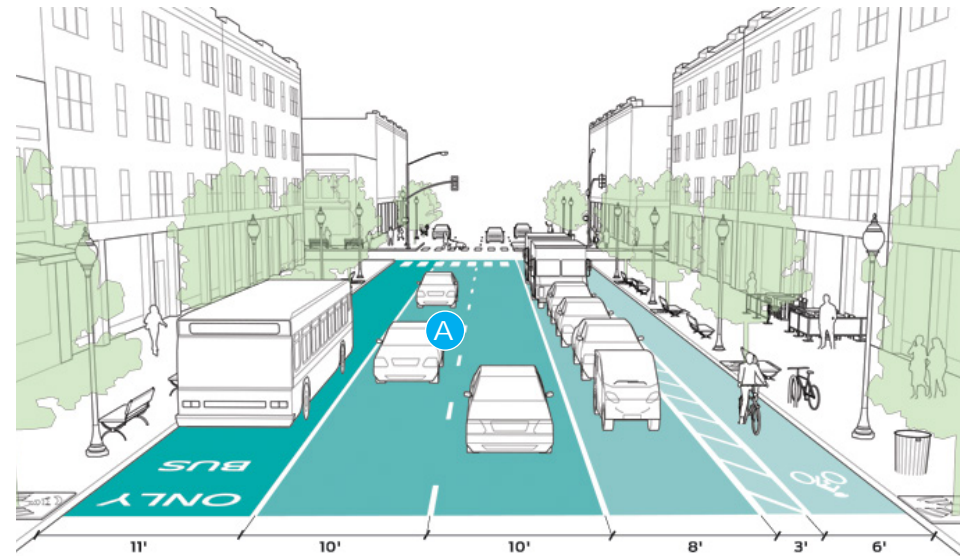
## LANE WIDTH AND REPURPOSING

- 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

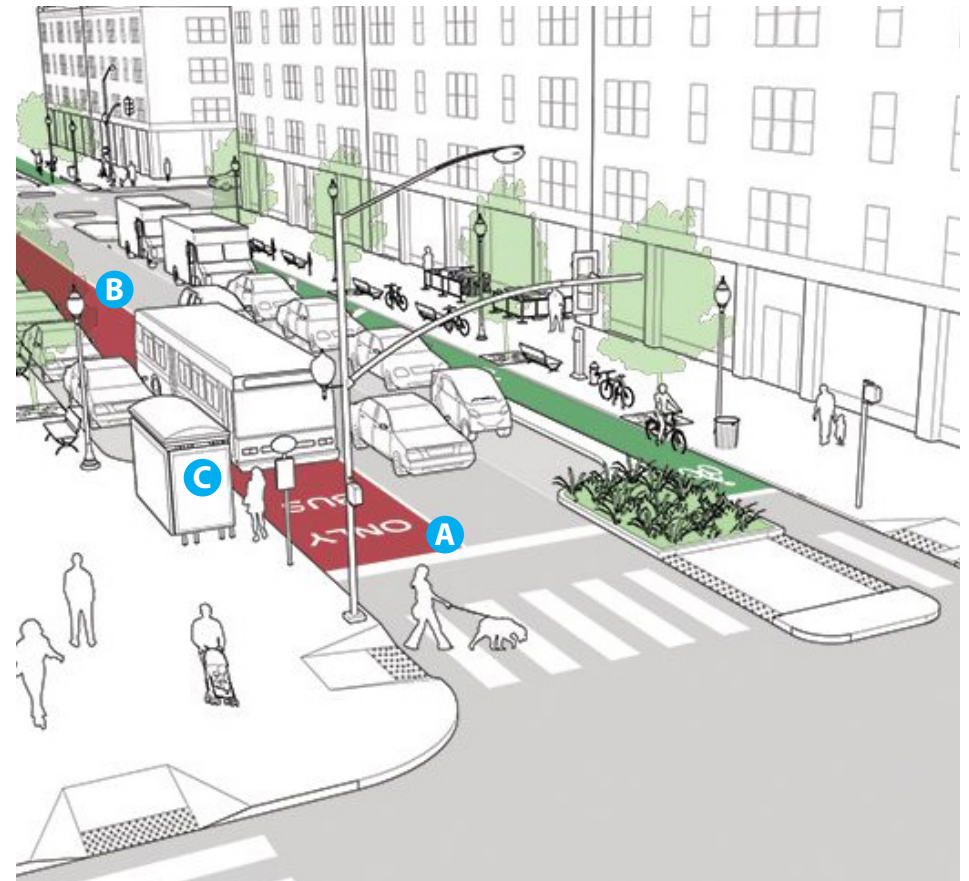
## Intersections

## 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

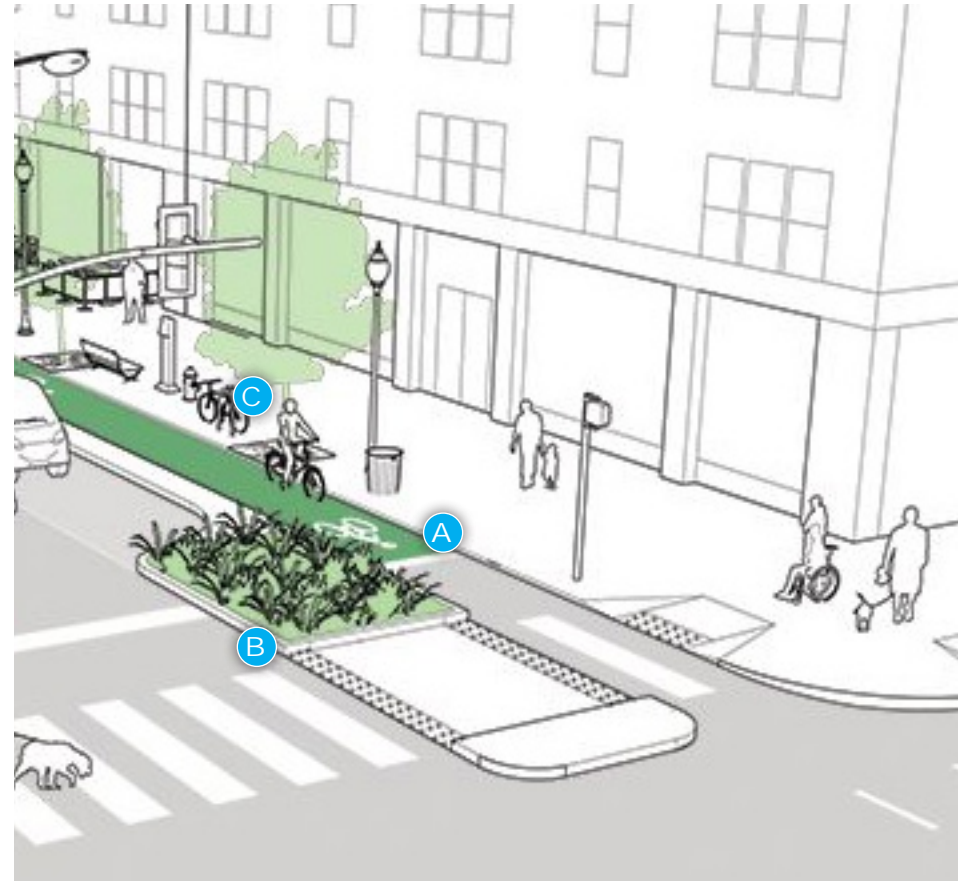
### BICYCLE LANES AND PATHS

- 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

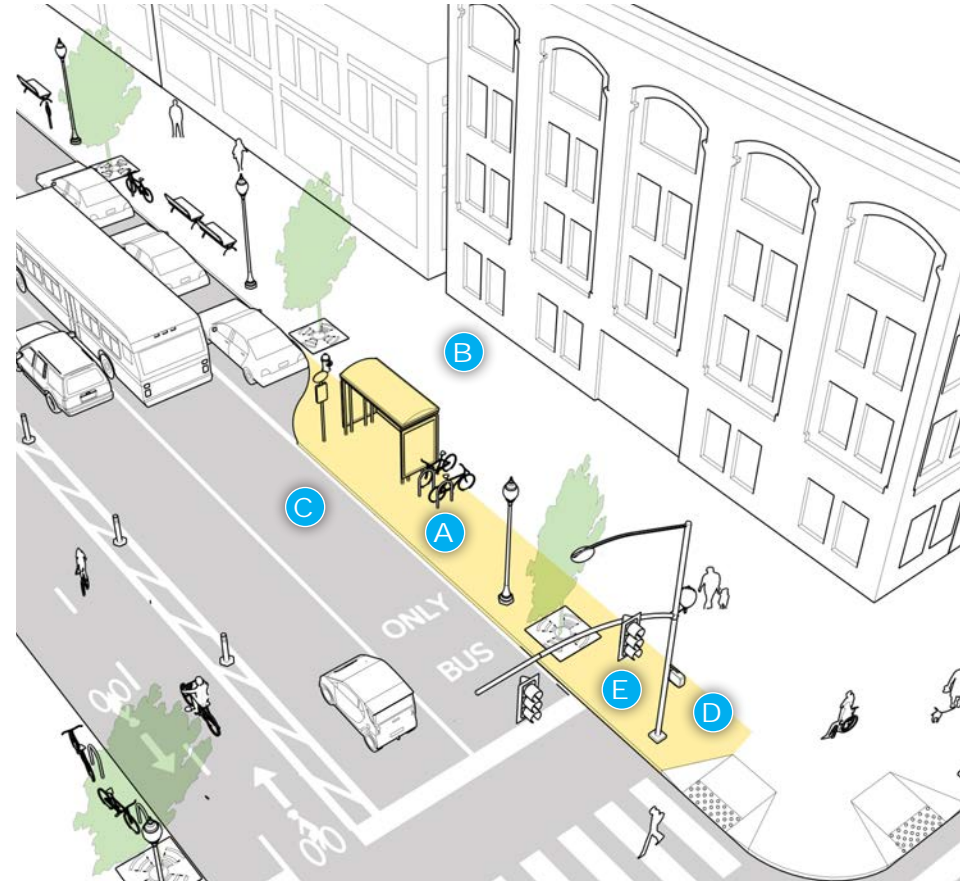
Intersections

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>
-----------	----------------	---------------	----------------------

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

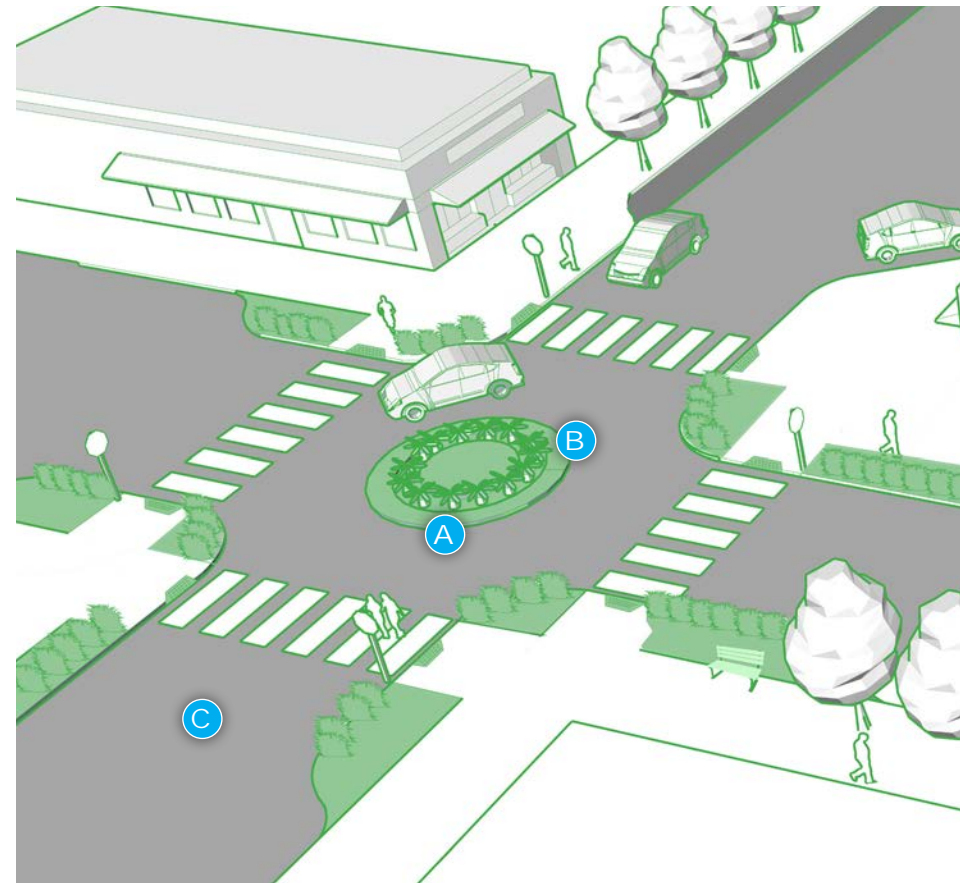
**Intersections**

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

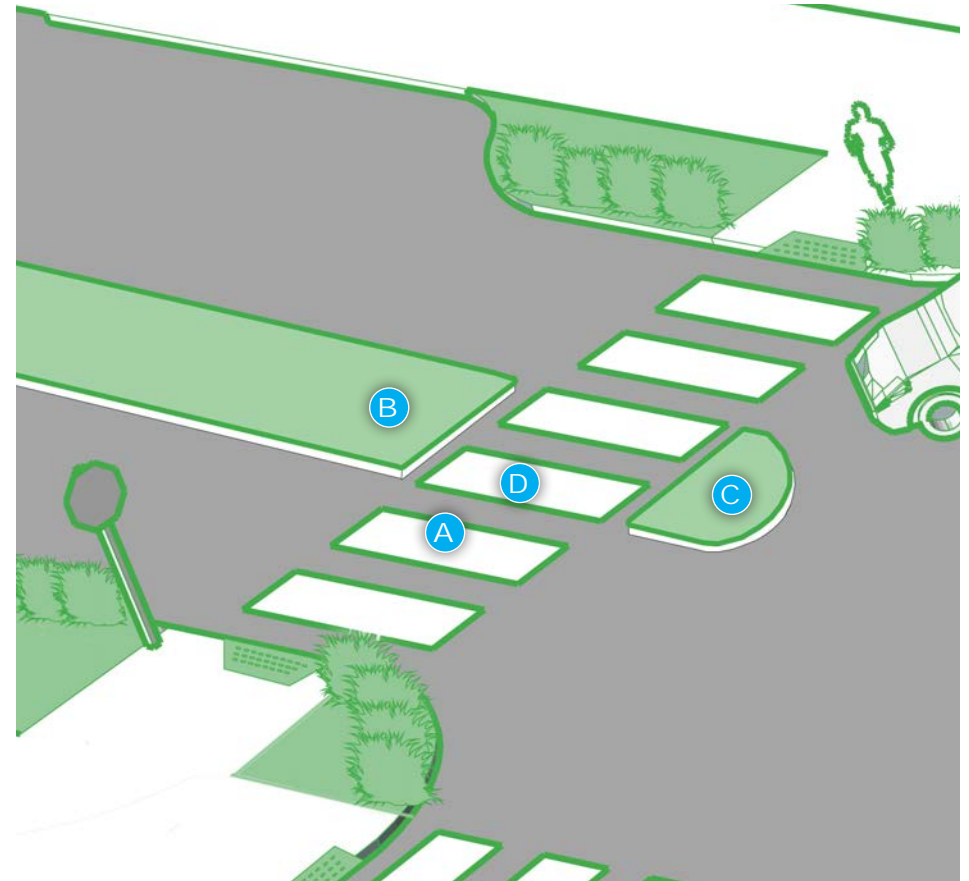
**Intersections**

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 motorists 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

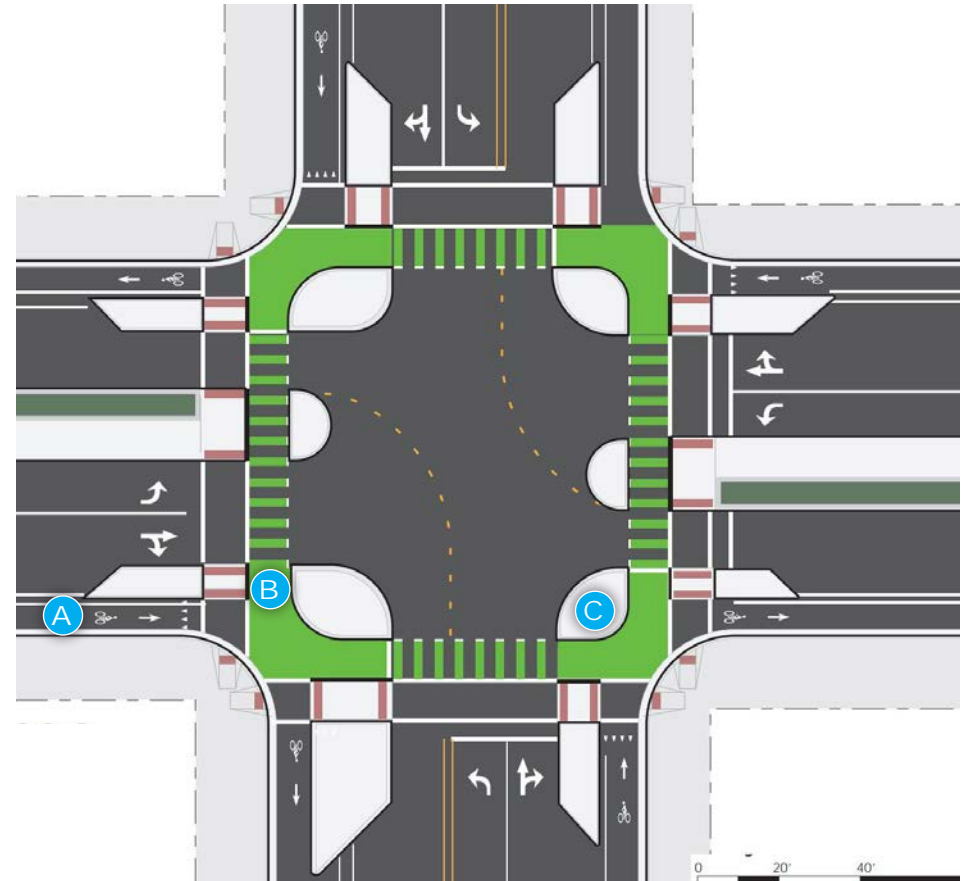
### PROTECTED BICYCLE INTERSECTION

- 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

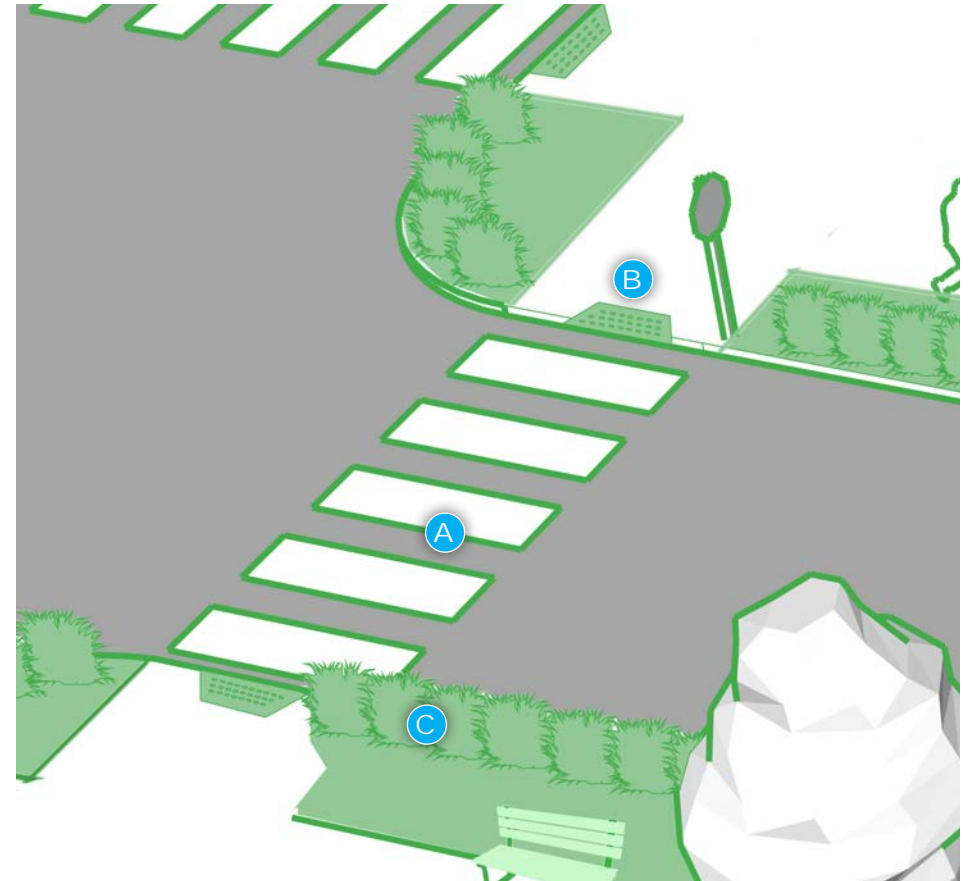
### ENHANCED CROSSWALK

- 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

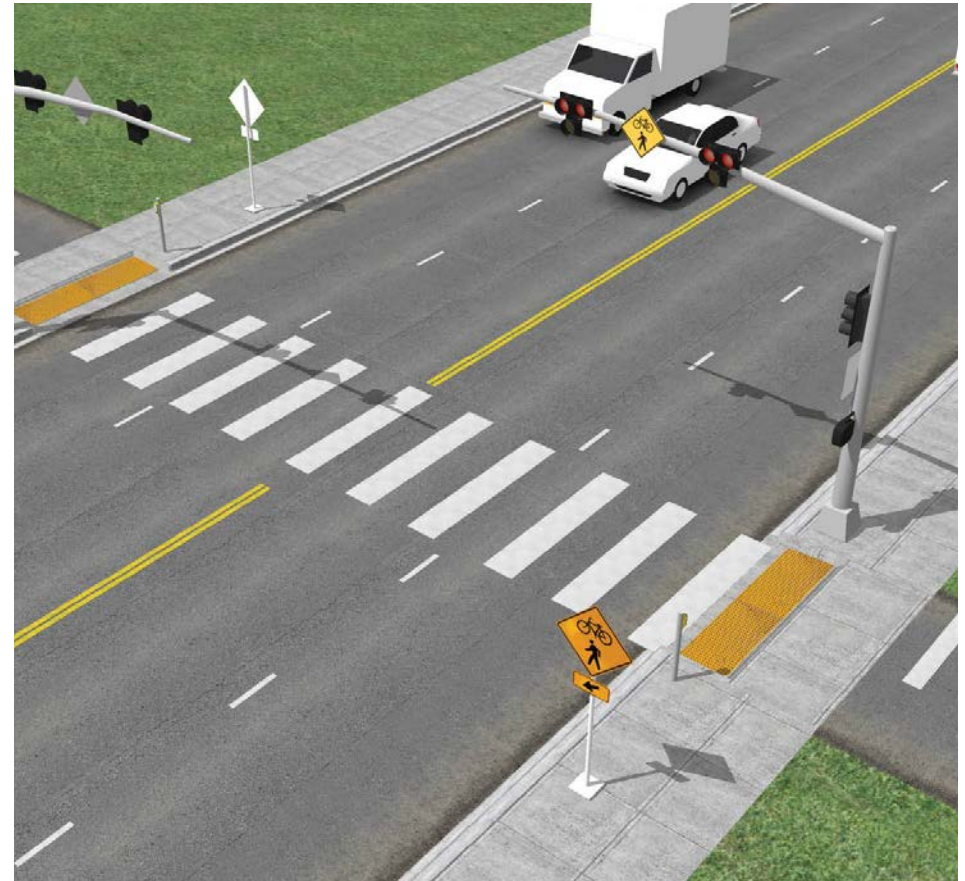
**Intersections**

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

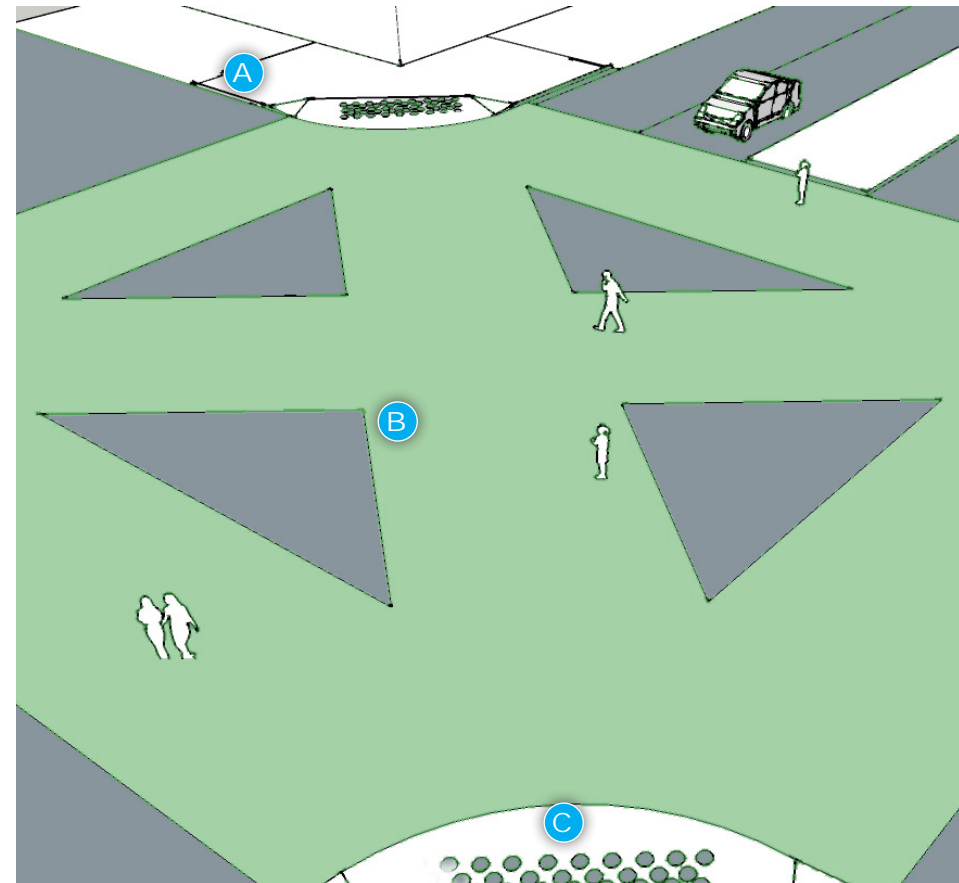
### SCRAMBLE CROSSWALK

- 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

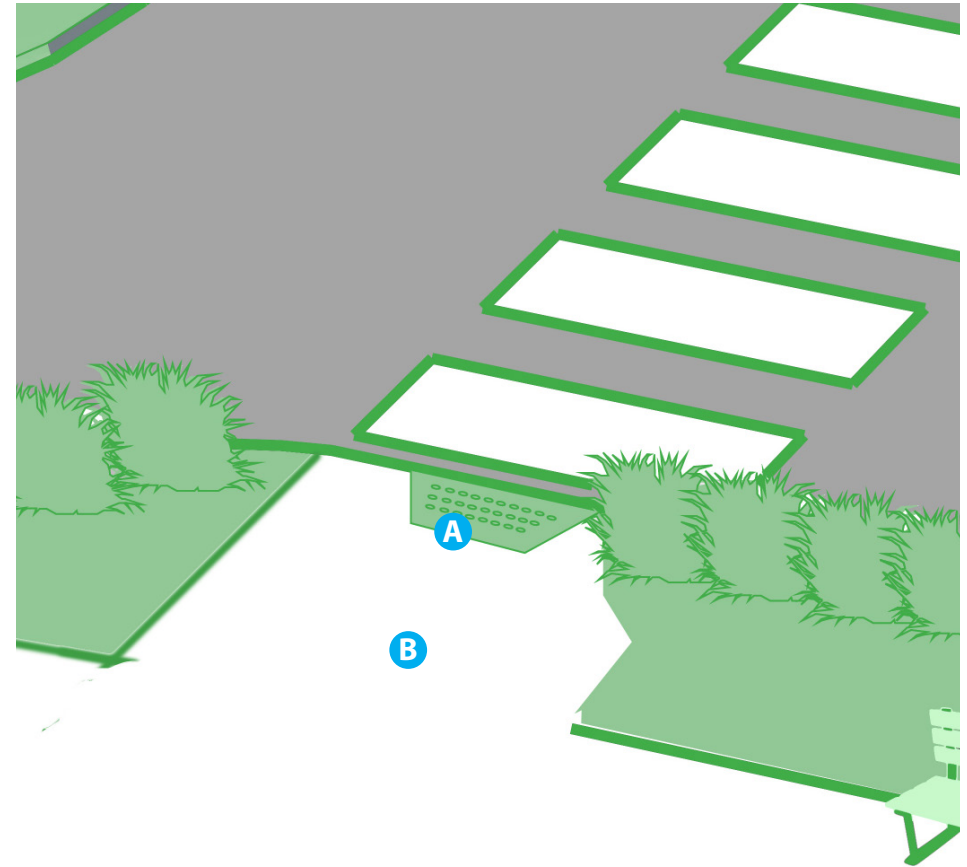
**Intersections**

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**

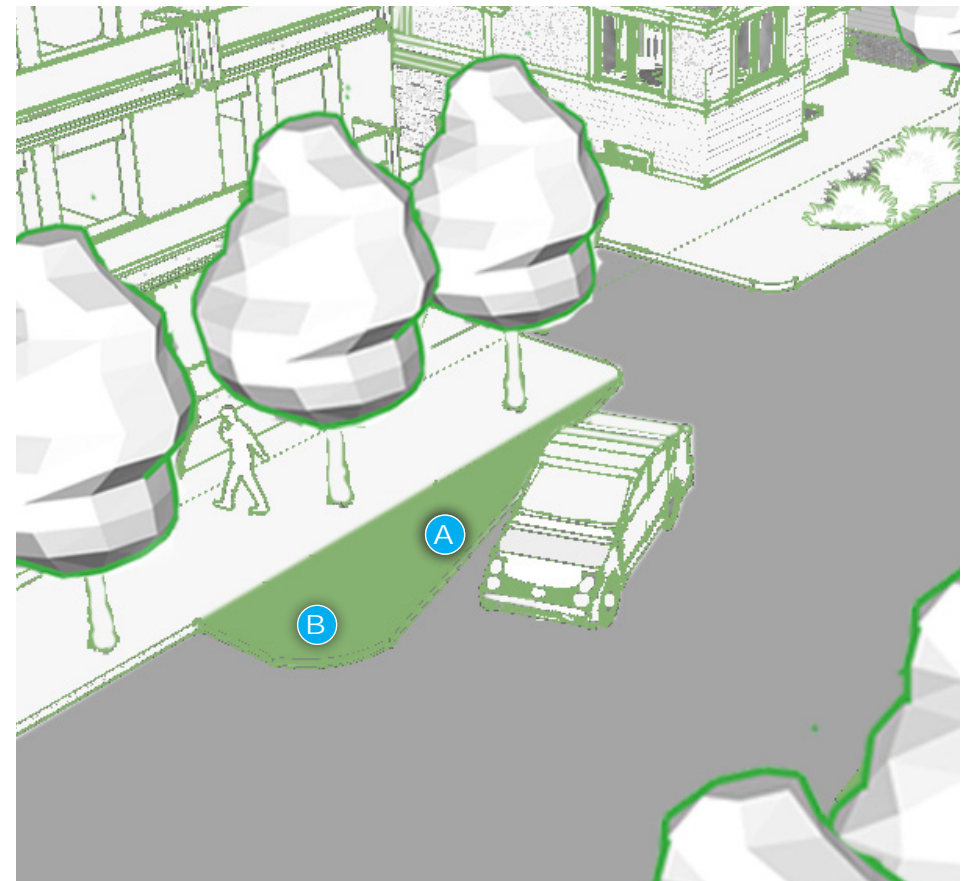
Intersections

Street Design

Chicanes reduce vehicle speeds by visually narrowing the roadway and requiring vehicles to shift their positions horizontally. Chicanes 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 HQTA 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**

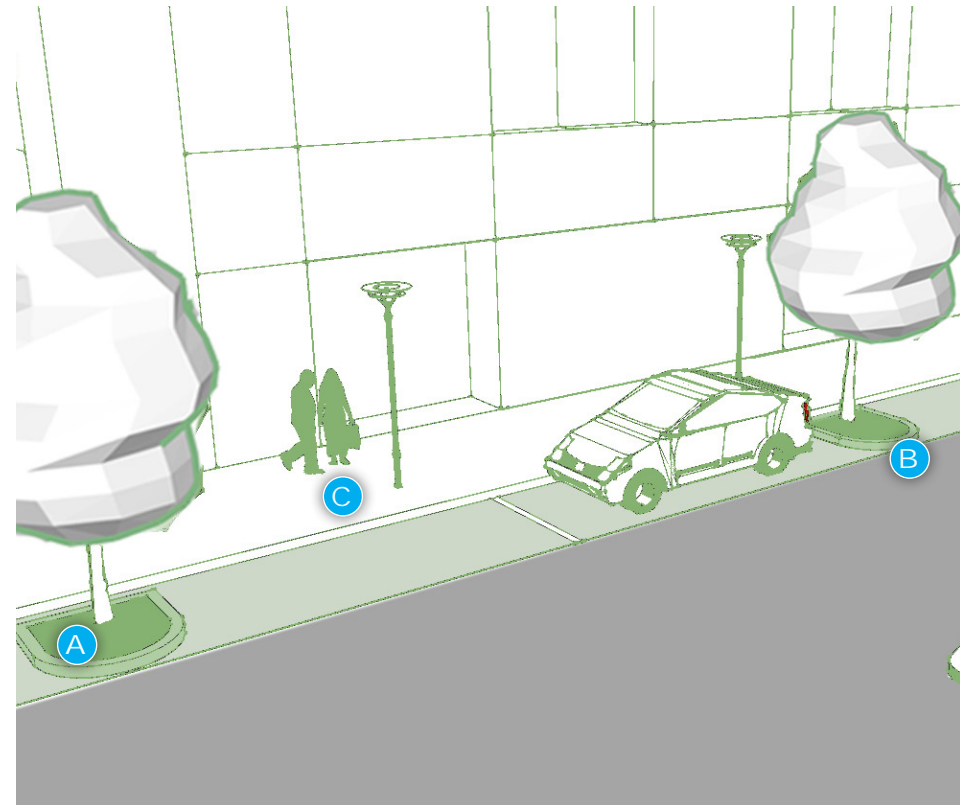
Intersections

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

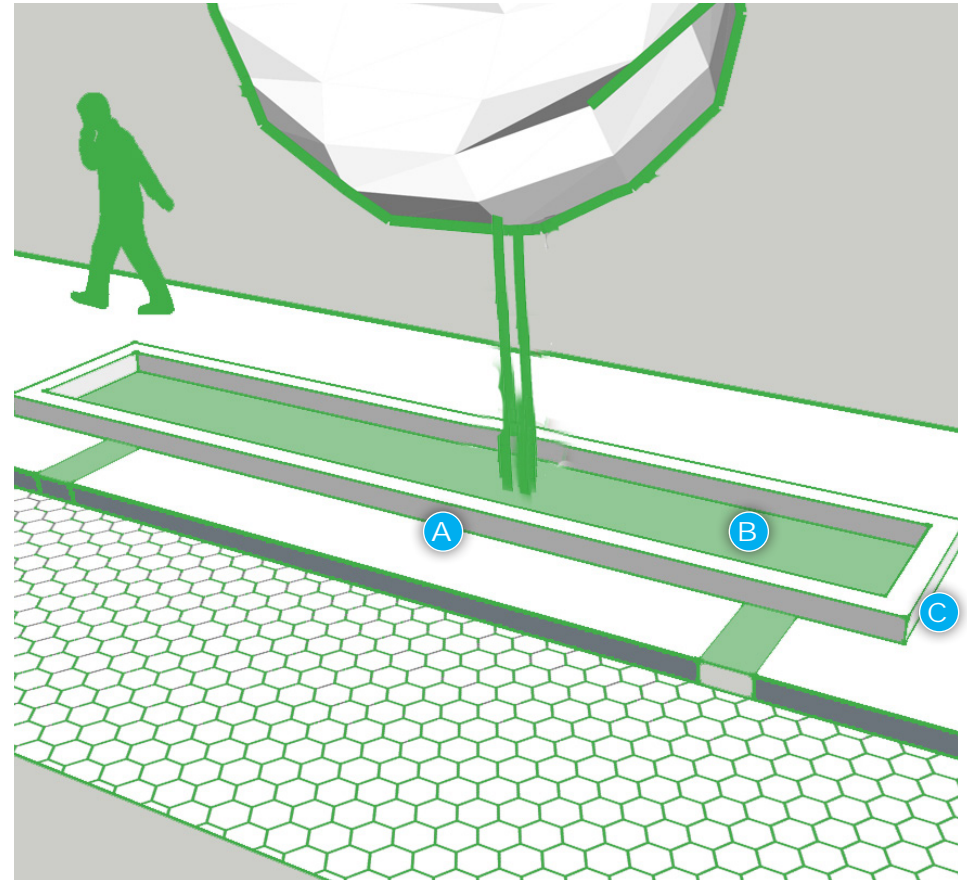
### GREENWAY PLANTER / BIOSWALE

- 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**

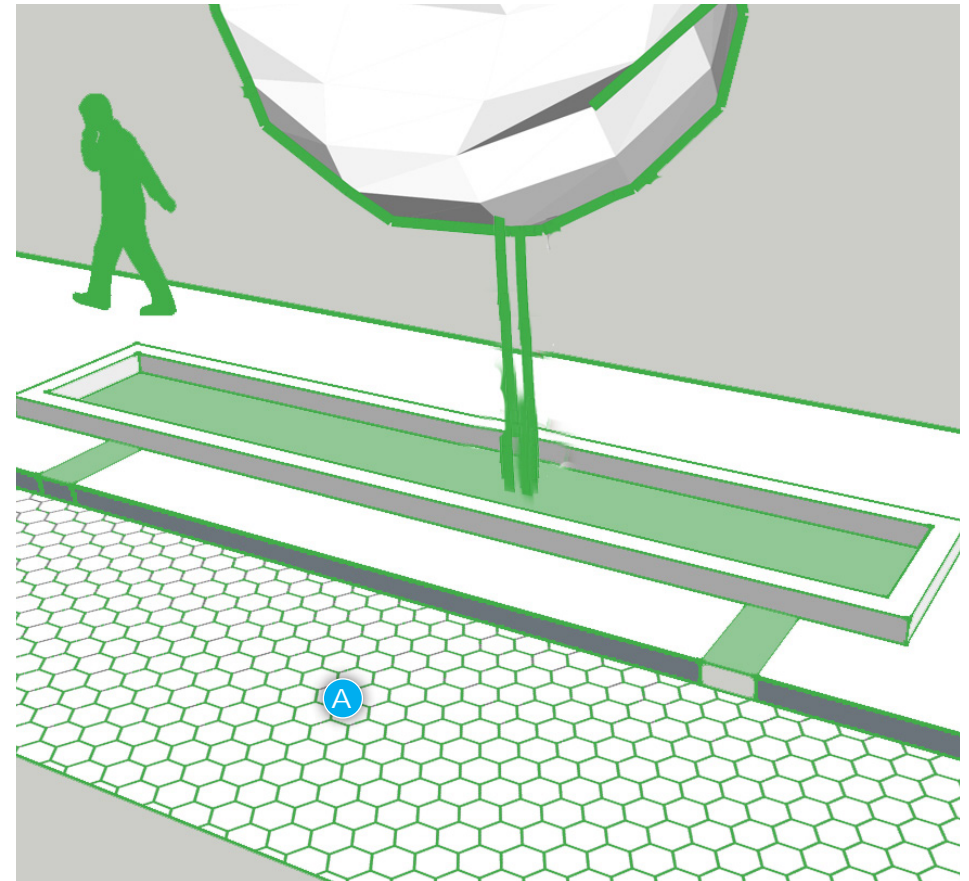
Intersections

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**

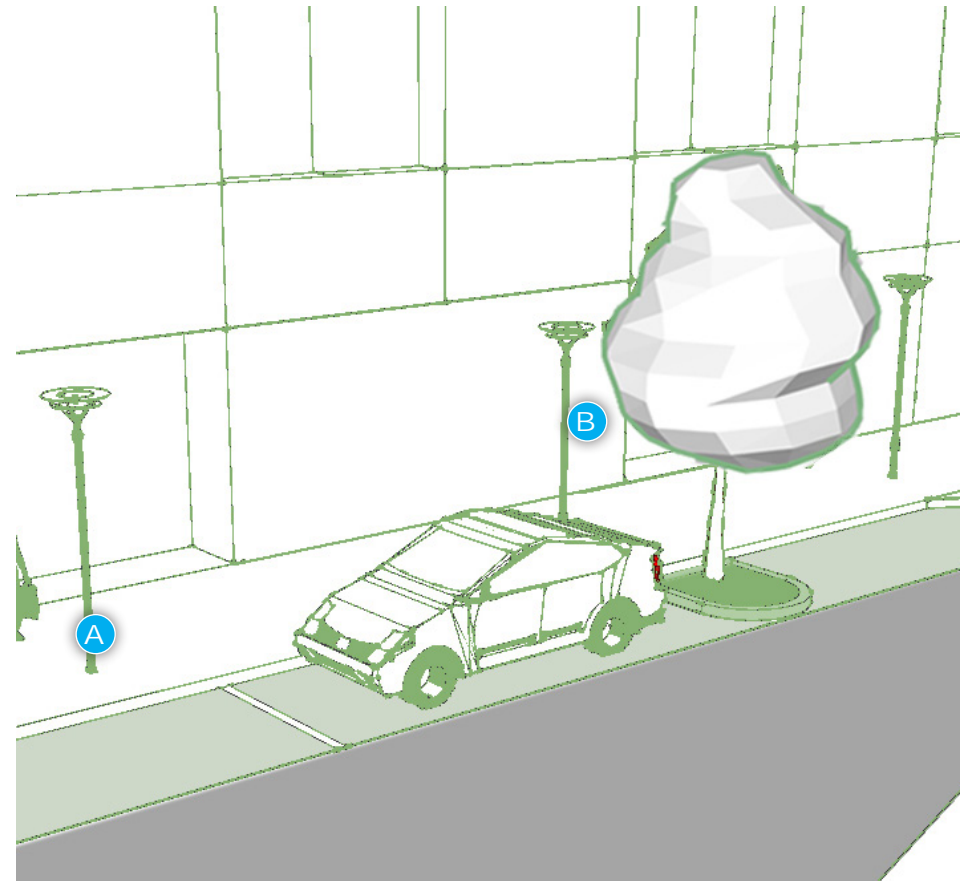
Intersections

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. 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

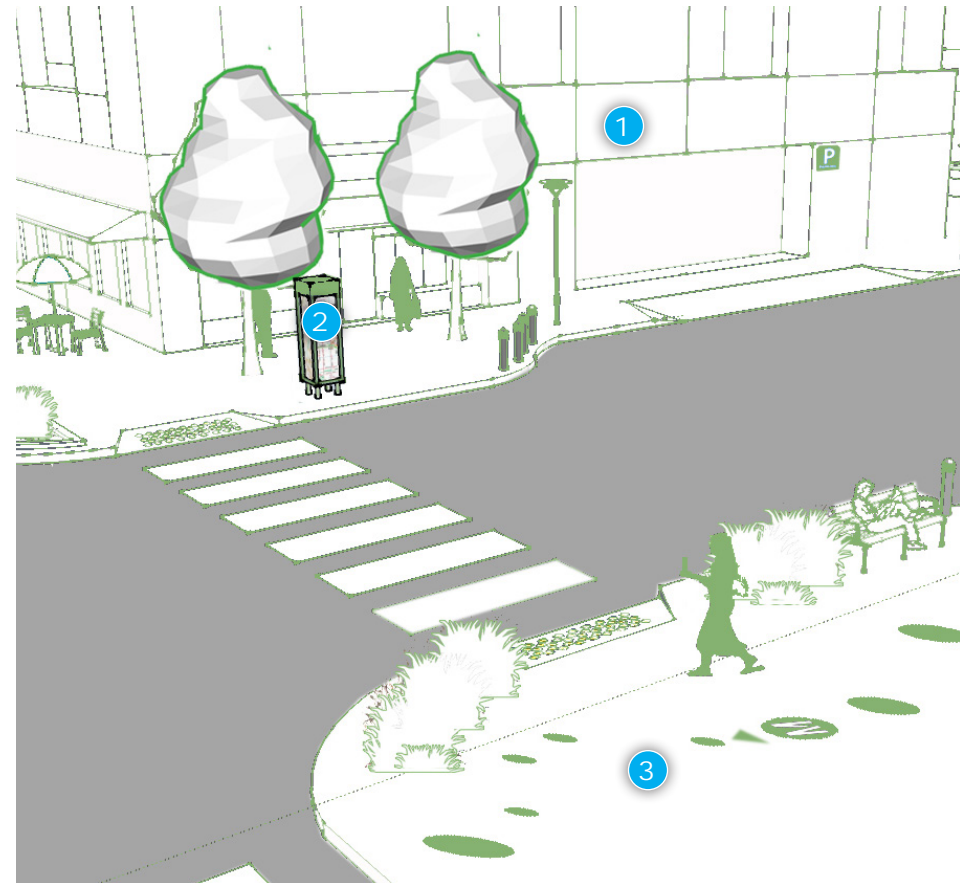
Intersections

**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

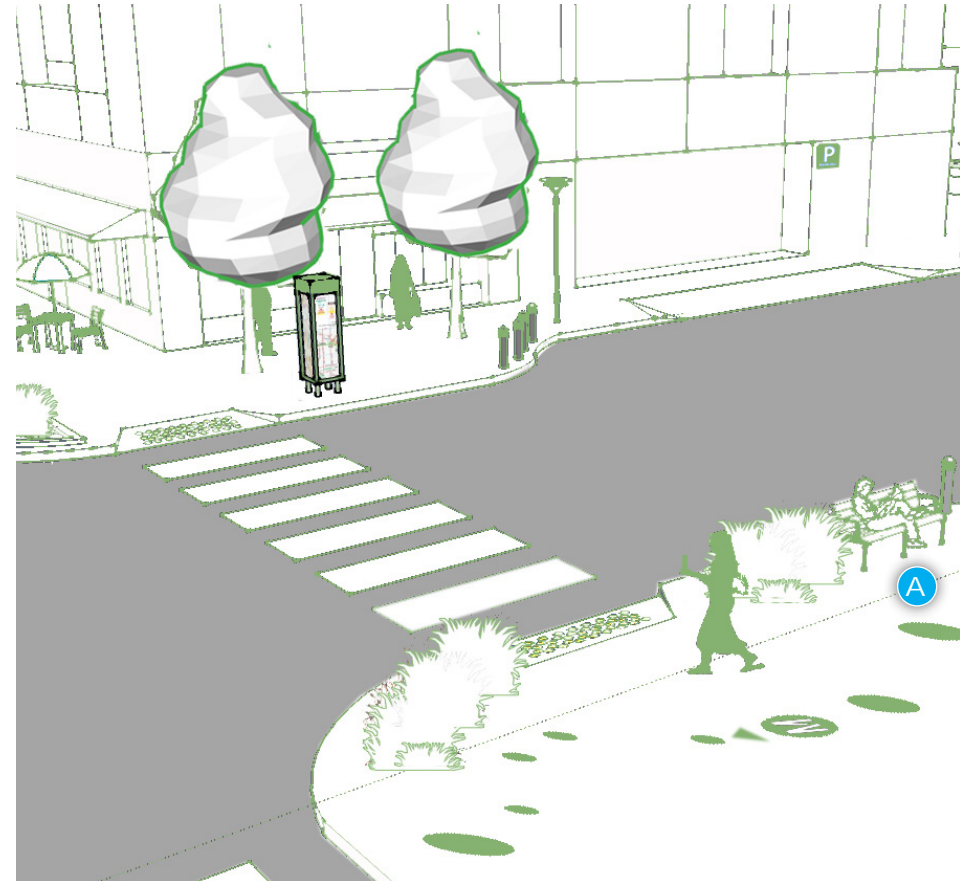
### STREET FURNITURE

- 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

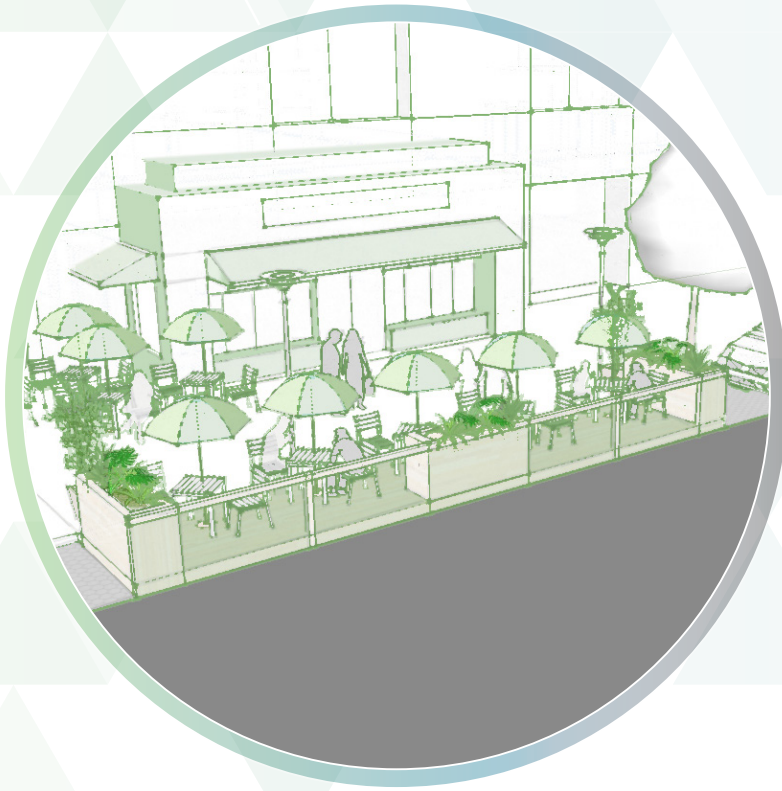


Sunset Triangle Park, Los Angeles, CA

# 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

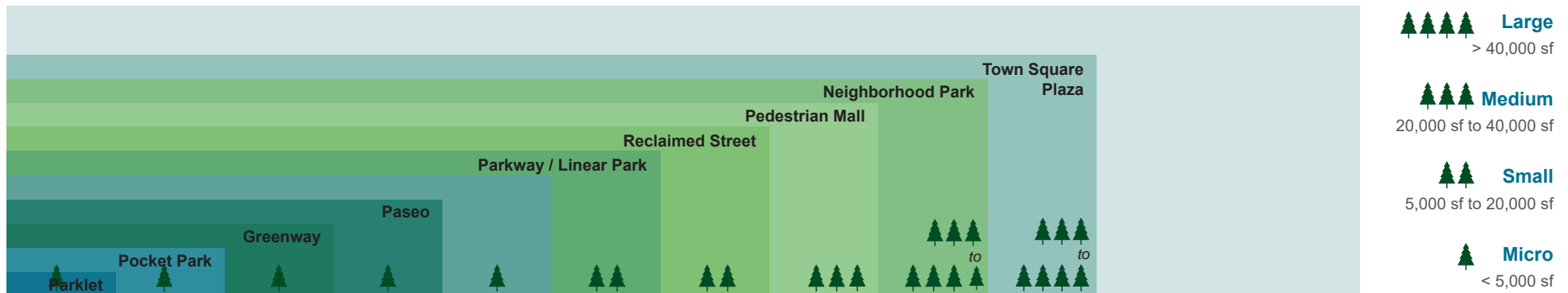
A key ingredient in creating a dynamic, urban TOD environment which is connected by transit and active transportation is to create attractive and functional places that people want to be. Placemaking includes providing public gathering and open spaces which are linked to transit and transit supportive 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



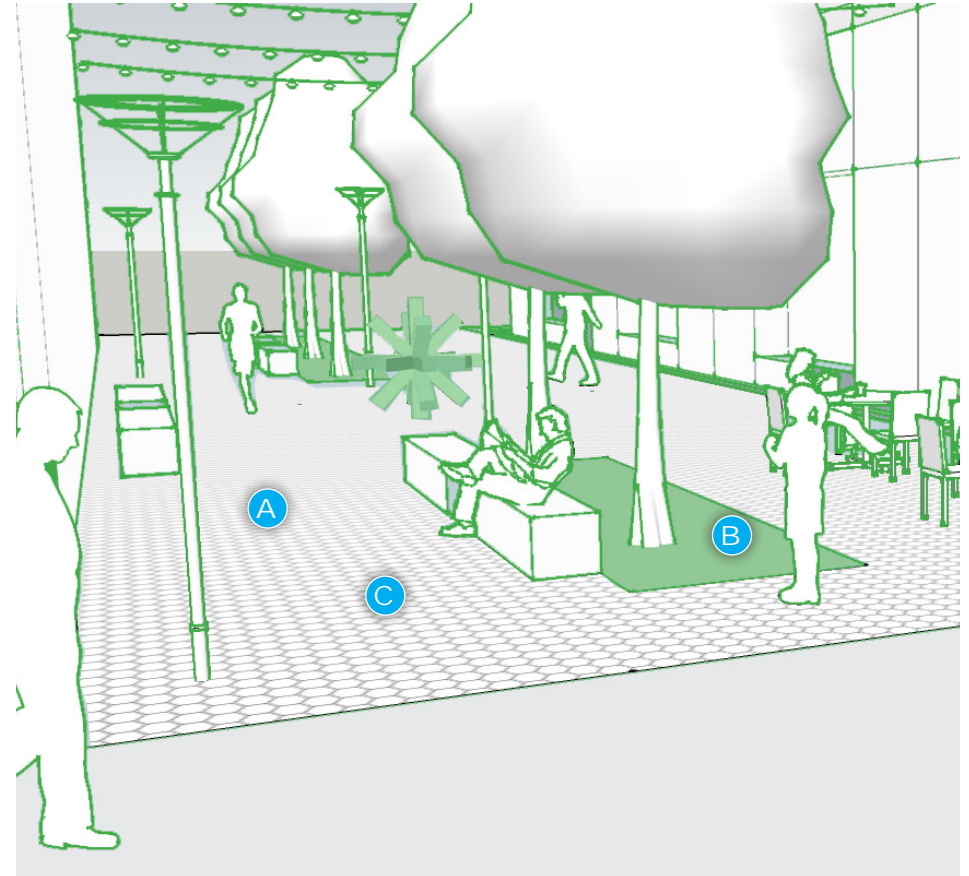
## Open Space / Placemaking

### POCKET PARK

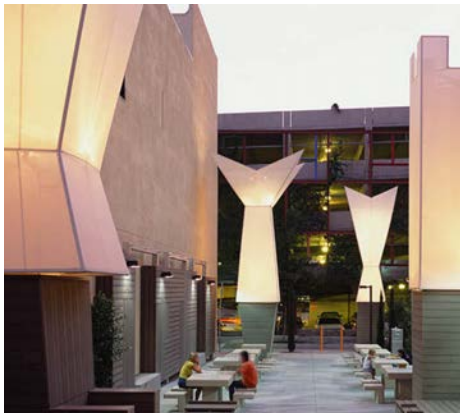
Pocket parks offer small areas for sitting, dining and recreation, and could be located on public or private property. They could occupy underutilized or leftover public right-of-way or small lots owned by the City. Private property pocket parks could be a parking lot no longer used or an easement designated 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



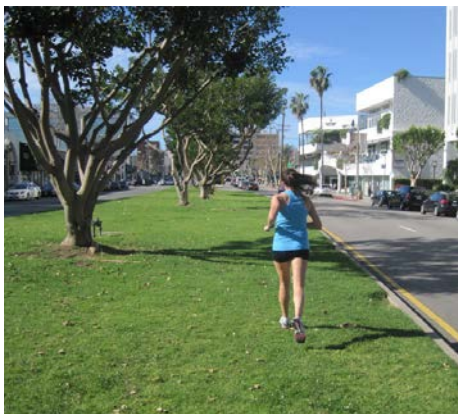
Orange Line Busway, Chatsworth, CA



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 HQTA 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



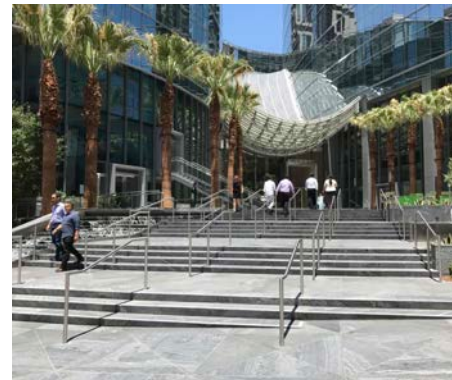
Del Mar Gold Line Plaza, Pasadena, CA



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

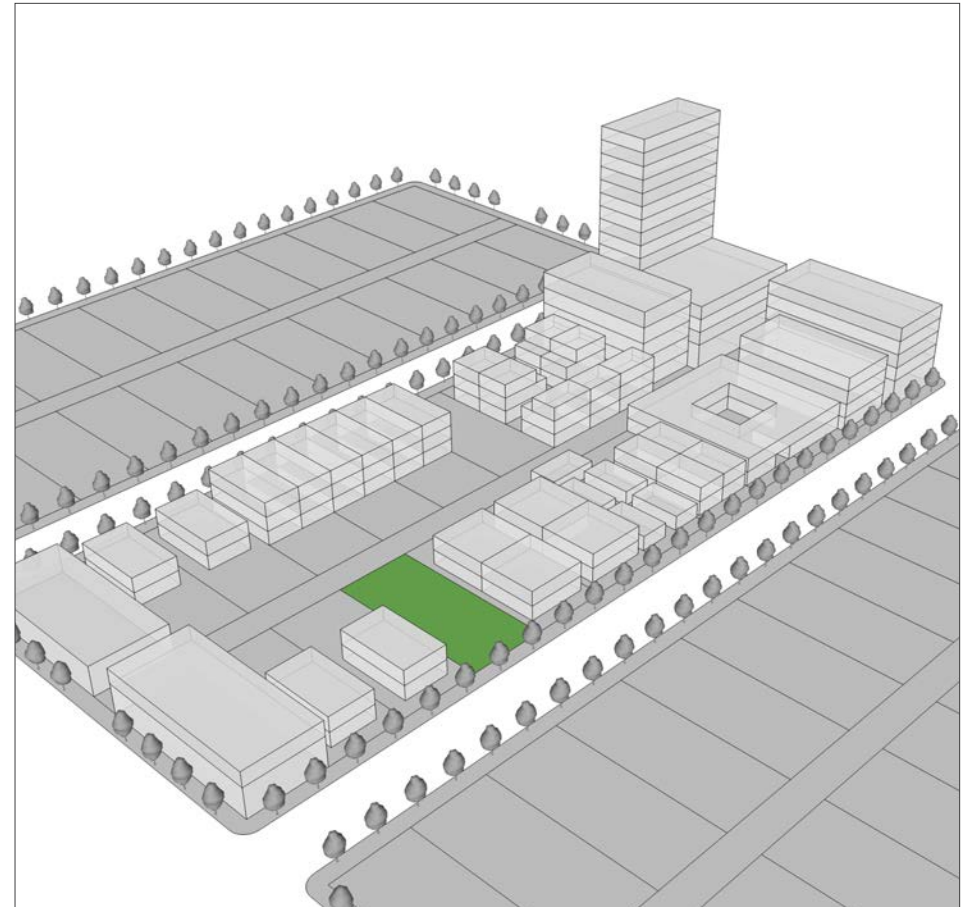
Specific building types for each typology with precedent imagery and diagrams

### 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

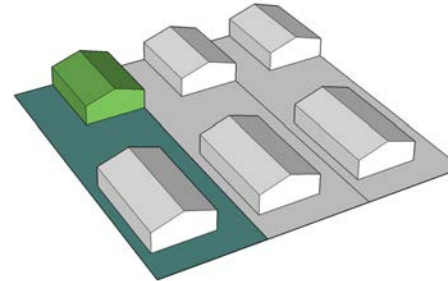
- 1 Triplex/Fourplex
- 2 Stacked Flats
- 3 Flex Apartment/Mixed Use
- 4 LinER Structure

#### D Mid/Hi-Rise Tower

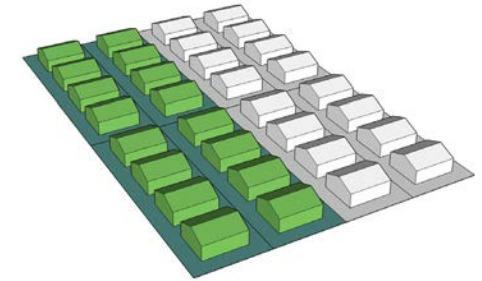
- 1 Mid-Rise Tower
- 2 High Rise Tower

**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

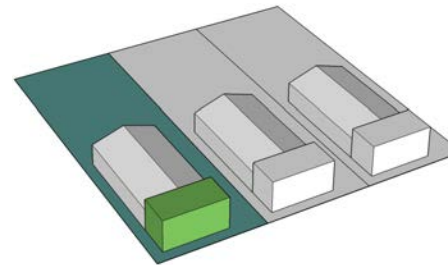
**Parking: Assumption:** 0-1 space per unit

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

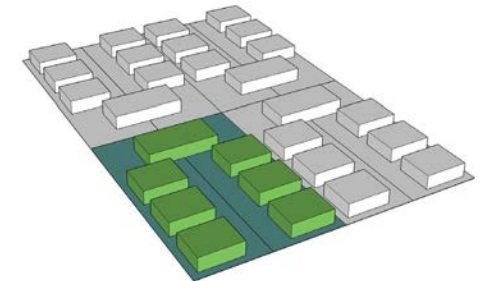
**Residential: / Commercial: Mix:**

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



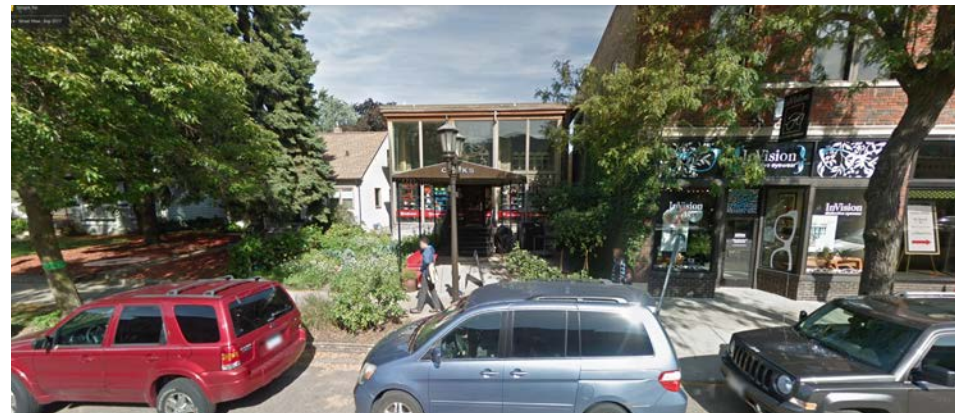
**2** SHOPFRONT HOUSE

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

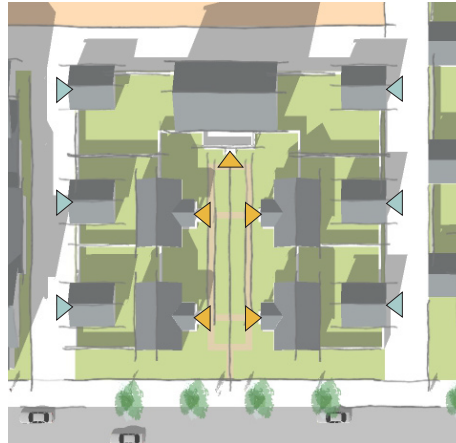
**3 BUNGALOW COURTYARD**

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

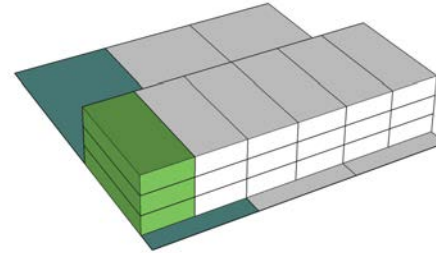
**FAR:** < 1.0

**Number of Floors:** 2 - 3

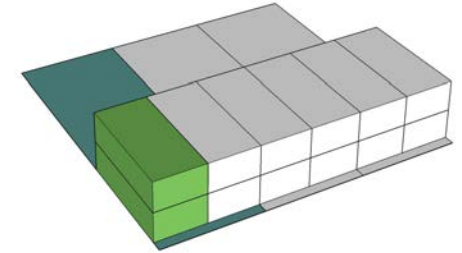
**Parking: Assumption:** 1-2 spaces per unit

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

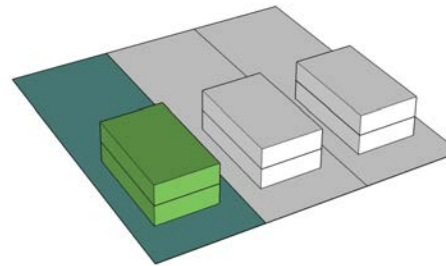
**Residential: / Commercial: Mix:**



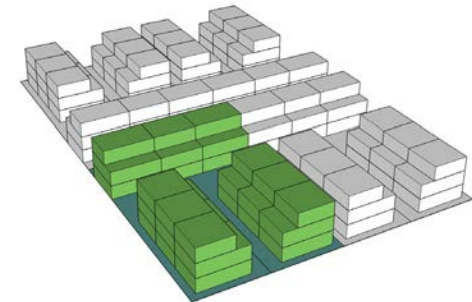
Attached Townhouse



Live/Work



Duplex



Small-Lot Subdivision

**Design Considerations**

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

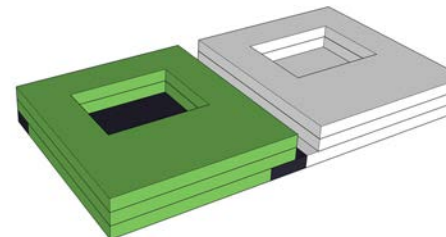
**Side Setback:** 0% of lot width

**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

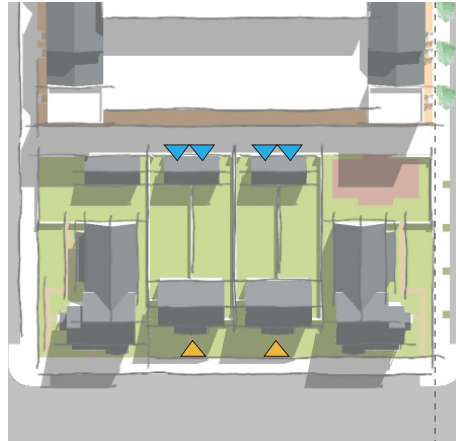
**3** DUPLEX

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

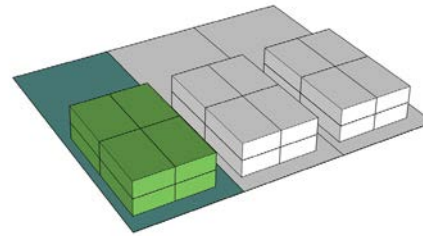
**Parking: Assumption:** 1 space per unit

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

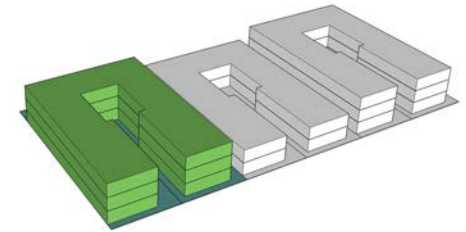
**Residential: / Commercial: Mix:**

Residential - 75% - 100%

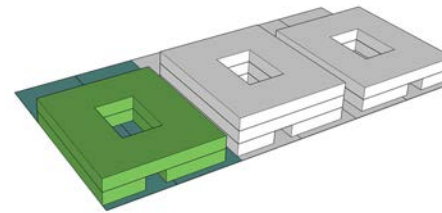
Commercial - 0% - 25%



Triplex/Fourplex



Courtyard



Flex Apartment/Mixed Use



Liner Structure

### 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%



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

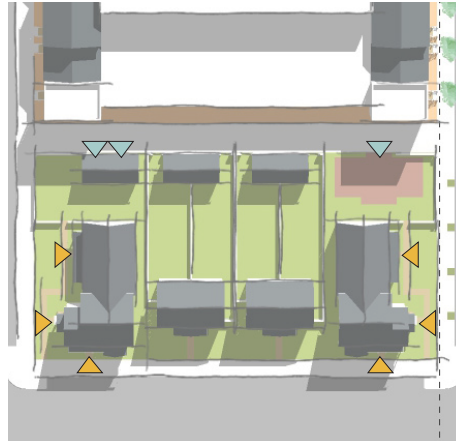
**1 TRIPLEX/FOURPLEX**

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

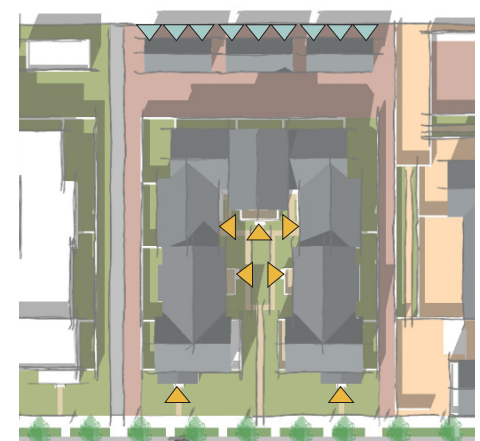
**2 COURTYARD**

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**

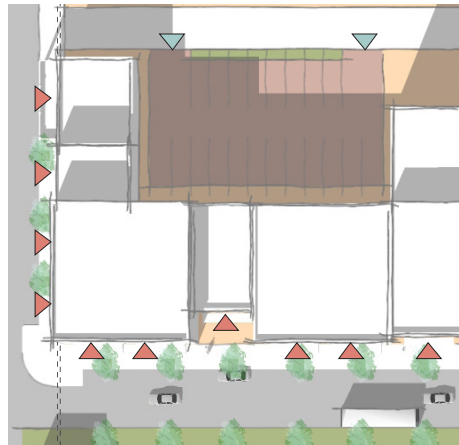
**3 FLEX APARTMENT/MIXED USE**

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.

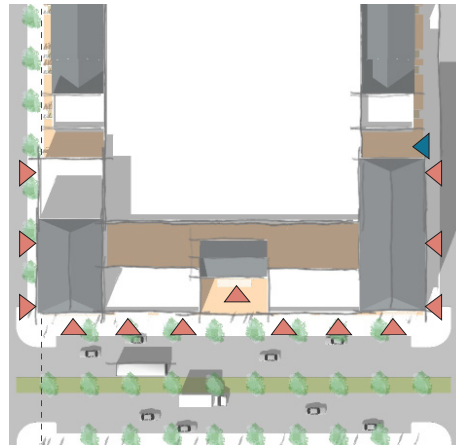
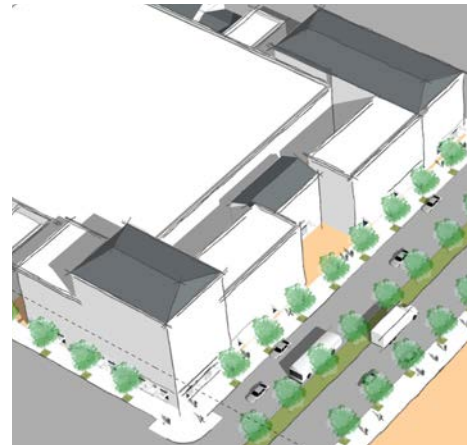


**4 LINER STRUCTURE**

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

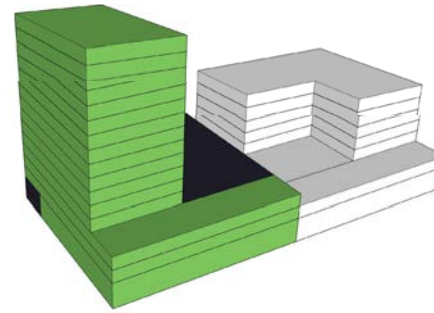


Dallas, Texas

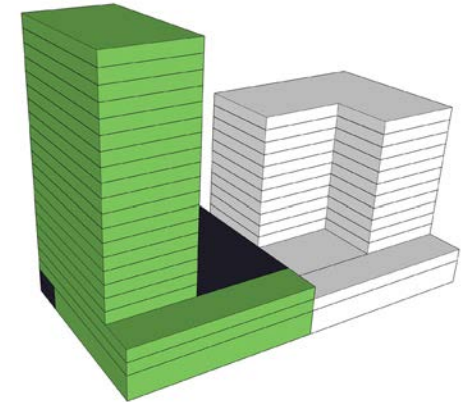
## A B C **D** Typology: Mid/Hi-Rise Tower

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.

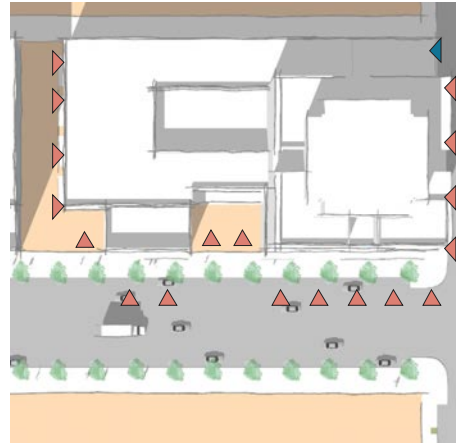
**2** HIGH-RISE TOWER

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	

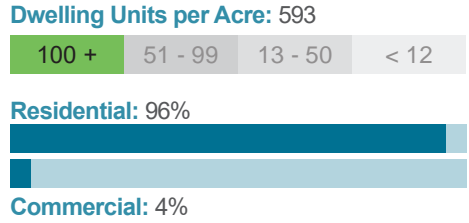


# TOD Precedents

## 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%

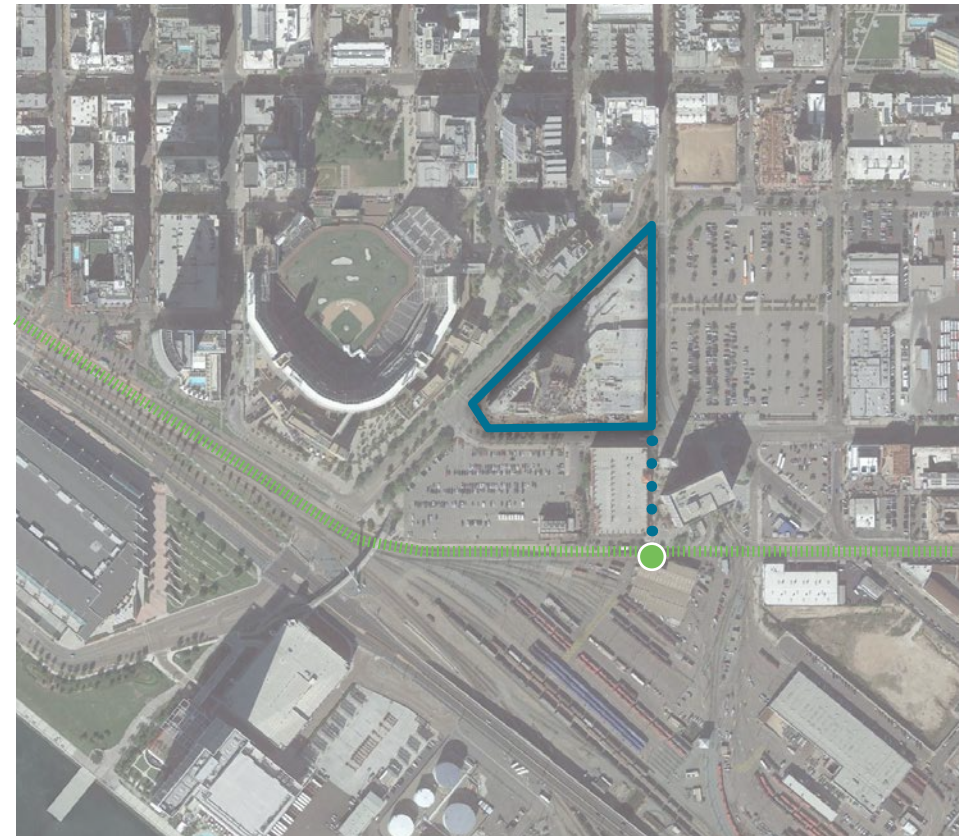


**Commercial:** 64%

### 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

<b>Dwelling Units per Acre: 0</b>			
100 +	51 - 99	13 - 50	< 12
<b>FAR: 4.6</b>			
3.0 +	2.0 - 2.9	1.0 - 1.9	< 1
<b>Residential: 0%</b>			
<b>Commercial: 100%</b>			

### 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

Dwelling Units per Acre: 139



Residential: 86%



Commercial: 14%

### 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

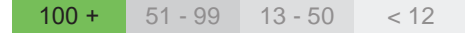
Number of Units: 2,800

Retail / Commercial: 450,000 sf

Office: 0 sf

Hotel Rooms: 0

Dwelling Units per Acre: 104



### 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

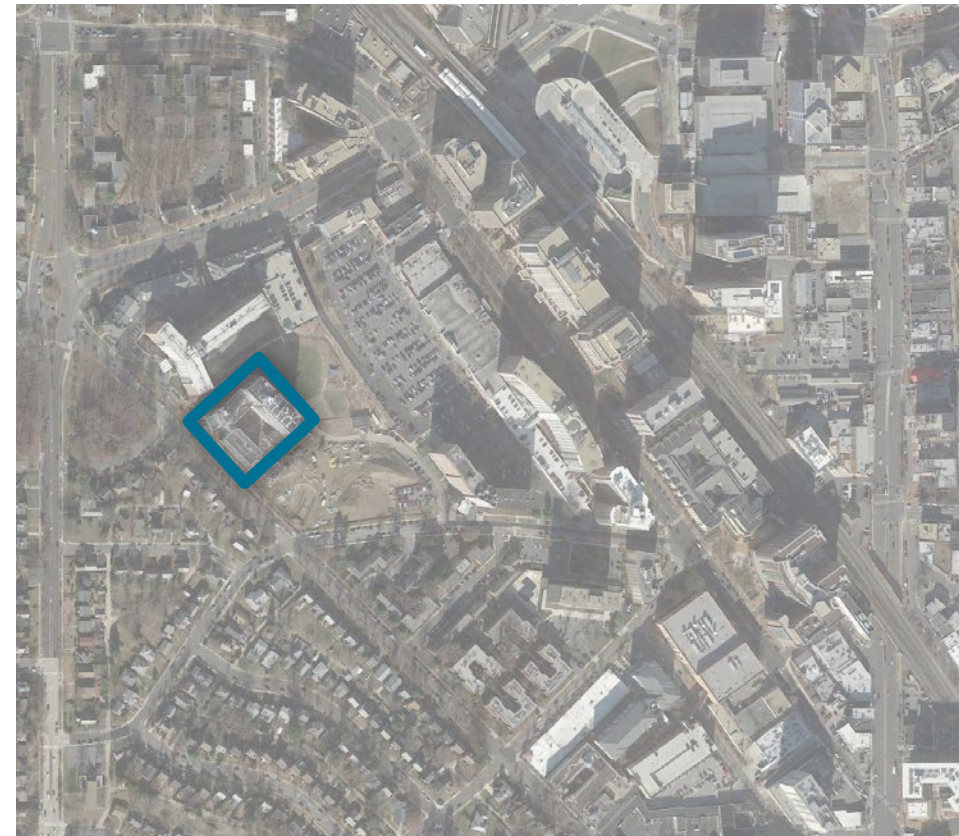
Hotel Rooms: 0

Parking: 177

Dwelling Units per Acre: 174

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

Open Space: Plaza



### 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

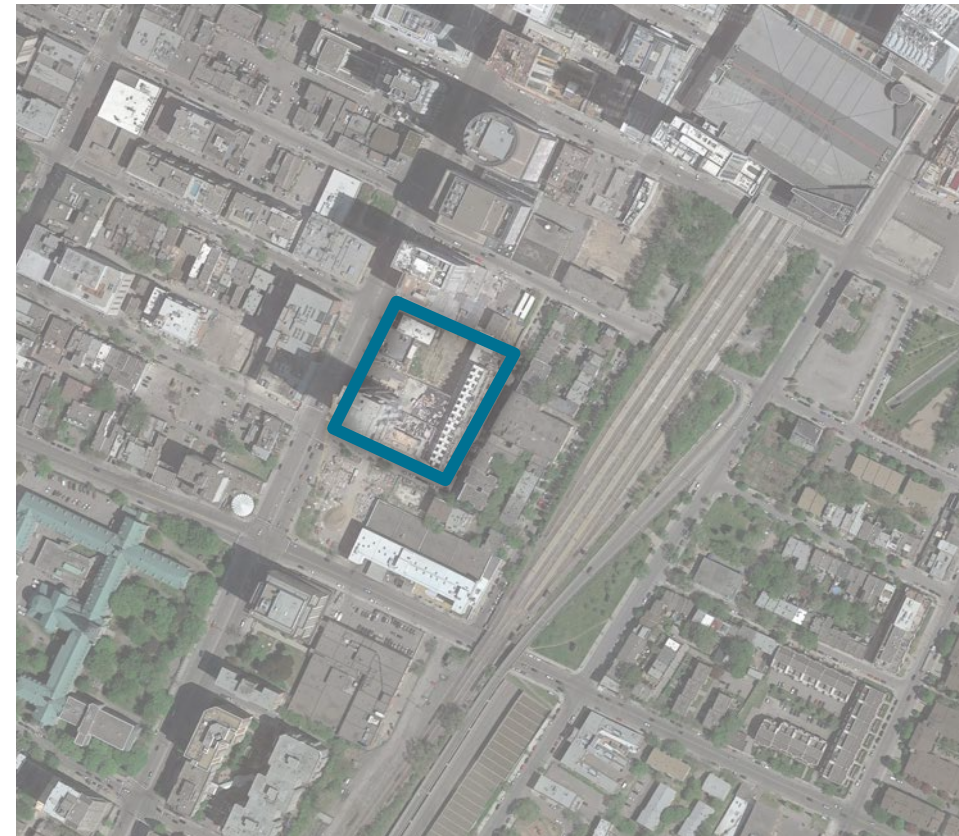
100 + 51 - 99 13 - 50 < 12

### Project Features

Open Space: 23,000 sf garden, roof amenities

Project Cost / Funding Sources: \$300 million

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### 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

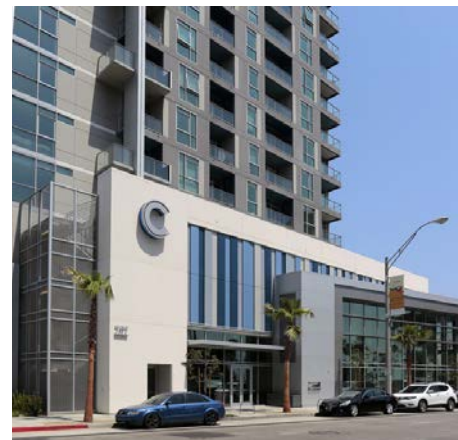
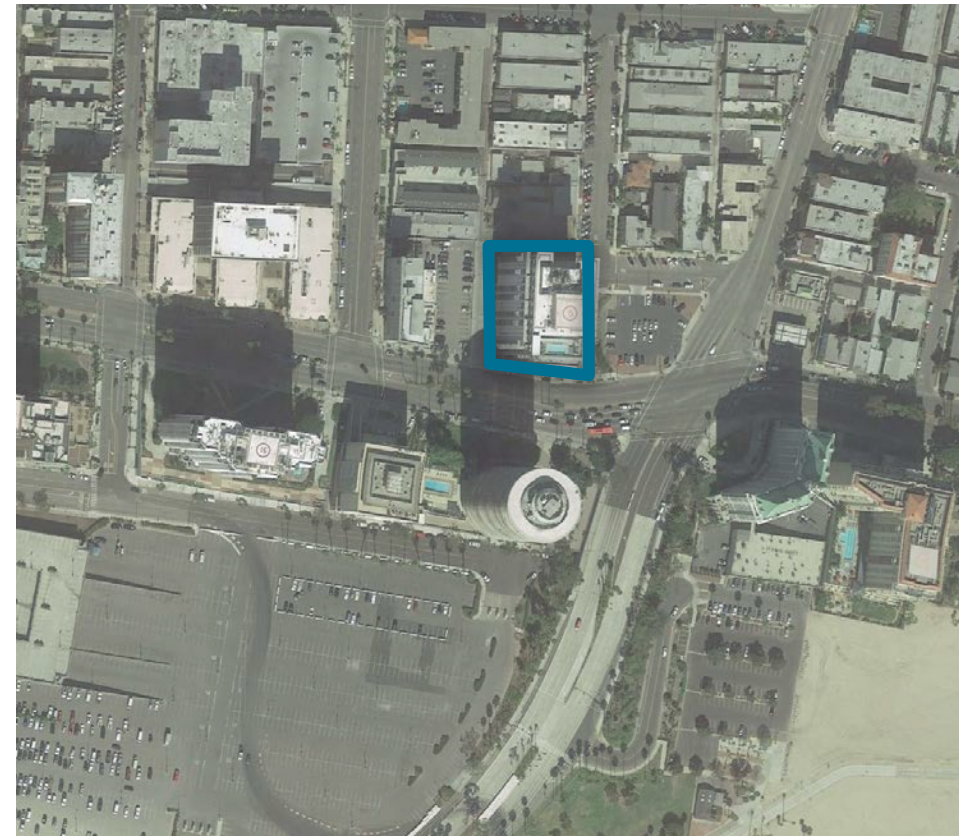
100 +	51 - 99	13 - 50	< 12
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#### Project Features

Open Space: Plaza

Project Cost: \$70 million

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#### 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



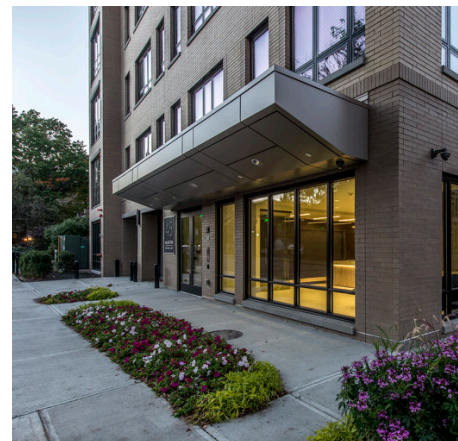
Residential: 100%

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

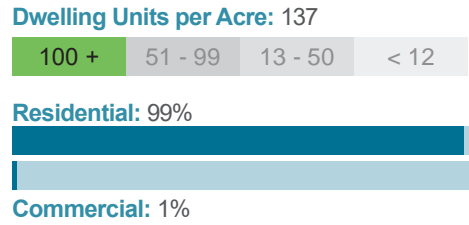


## TOD Precedents

**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

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### 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

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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

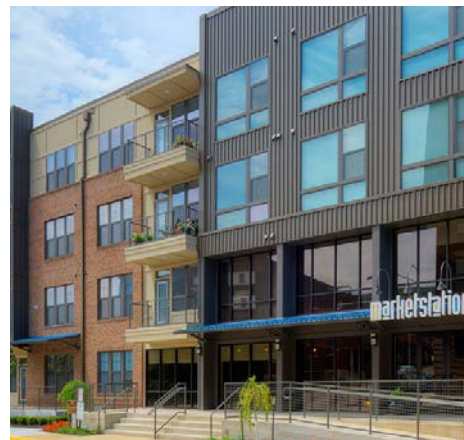
**Residential:** 99%

**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

Dwelling Units per Acre: 68

Number of Floors (min/max): 10

100 + 51 - 99 13 - 50 < 12

Number of Units: 476

Retail / Commercial: 107,000 sf

Office: 0 sf

Hotel Rooms: 0

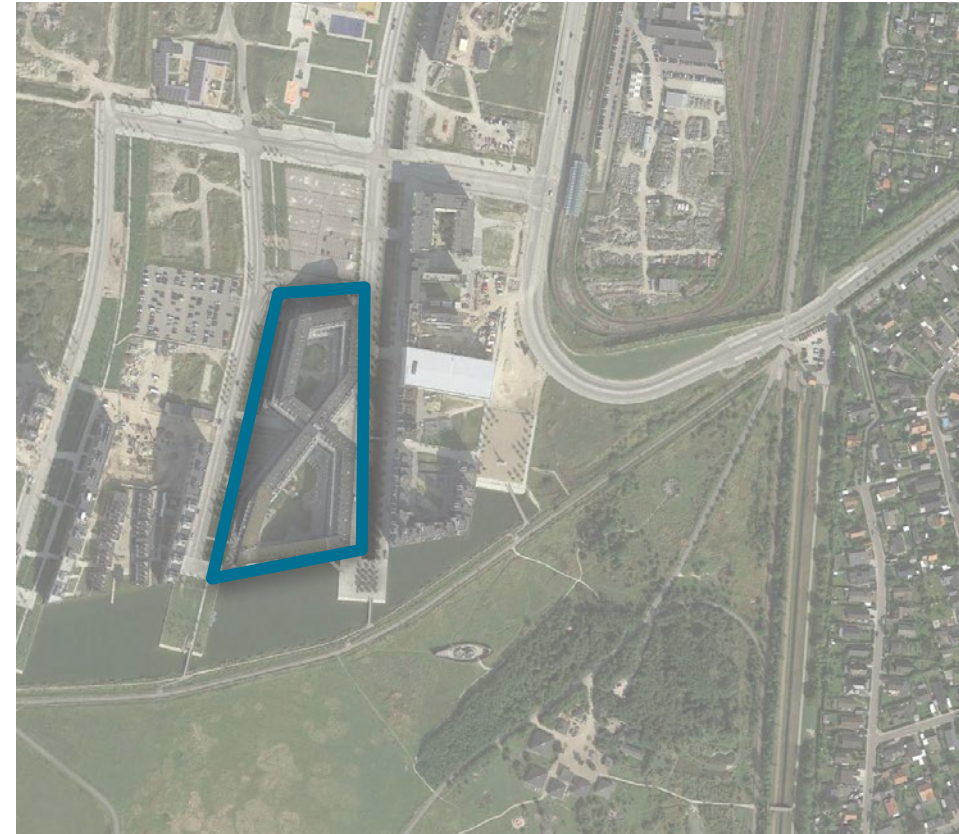
Parking: 340

#### Project Features

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

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

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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

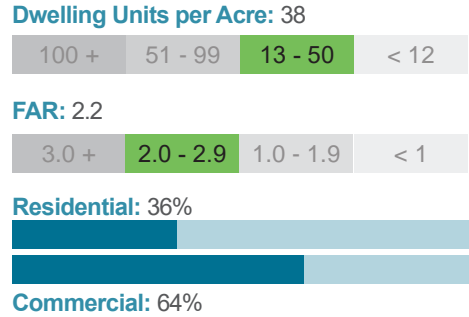


# TOD Precedents

## 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

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### Project Features

Open Space: None



### 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

Number of Floors (min/max): 5

Number of Units: 360

Retail / Commercial: 43,000 sf

Office: 0 sf

Hotel Rooms: 0

Parking: 554

Dwelling Units per Acre: 30

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

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**Size:** 3.4 acres

**Dwelling Units per Acre:** 102

**Number of Floors (min/max):** 4 / 7

100 + 51 - 99 13 - 50 < 12

**Number of Units:** 347

**Retail / Commercial:** 11,000 sf

**Office:** 0 sf

**Hotel Rooms:** 0

**Parking:** 1,200 subterranean

#### 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

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### 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

#### Project Features

**Open Space:** Central plaza

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

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

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#### 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

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### Project Features

**Open Space:** Central courtyard, playground



### 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

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### 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

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

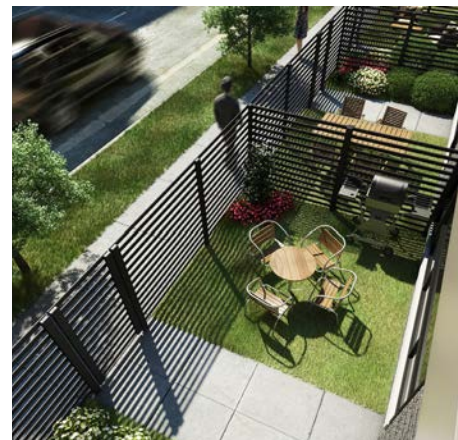
**Residential:** 100%

**Commercial:** 0%

### Project Features

**Open Space:** Private front balcony

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### 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

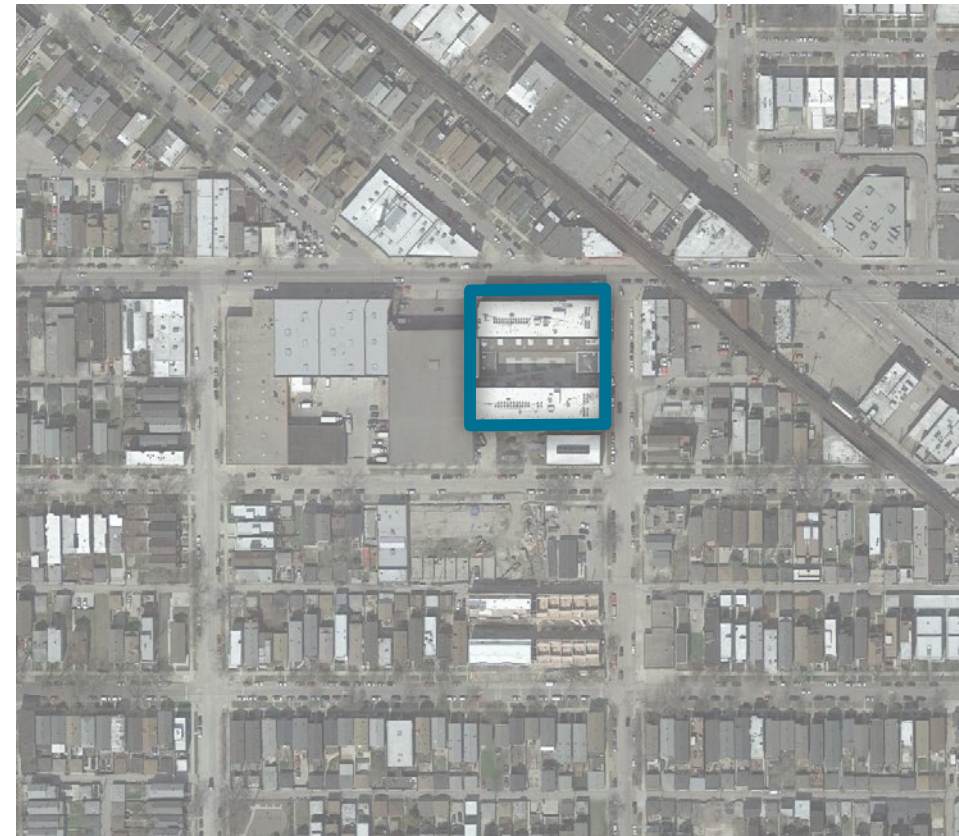
Dwelling Units per Acre: 82

100 + 51 - 99 13 - 50 < 12

#### Project Features

Open Space: Central courtyard

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#### 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%

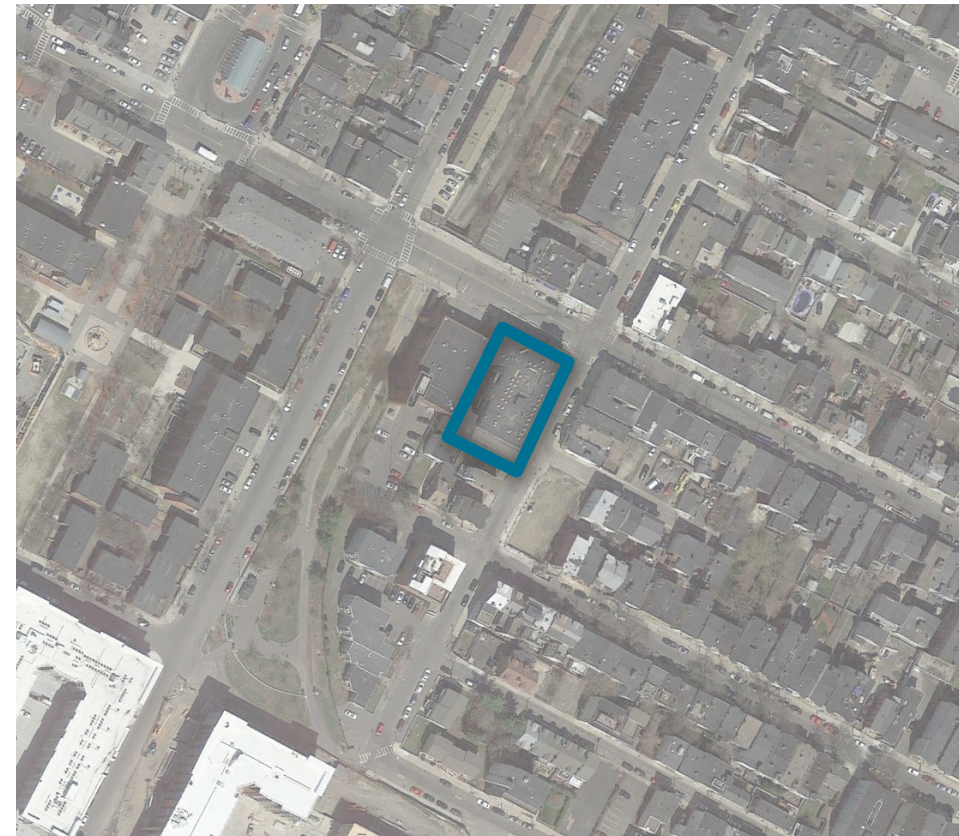


Commercial: 4%

### 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%



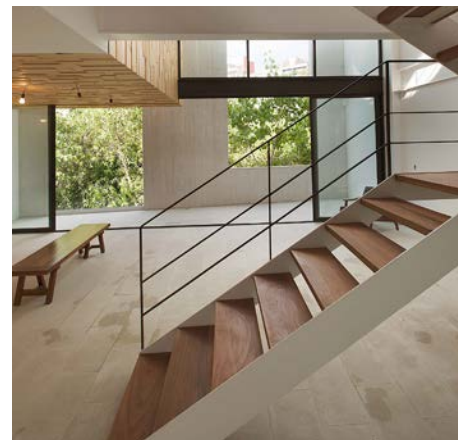
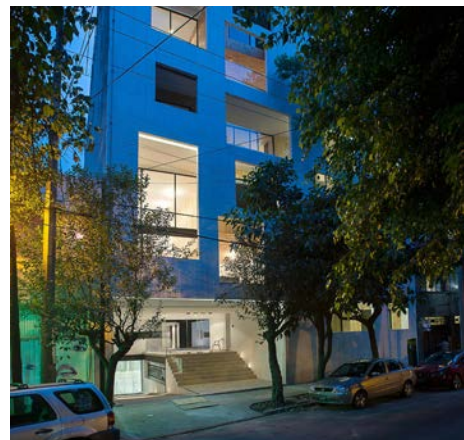
Commercial: 10%

### Project Features

Open Space: Courtyard

Special Considerations: Located within a historic preservation district

SCAG Region California United States **International**



### 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

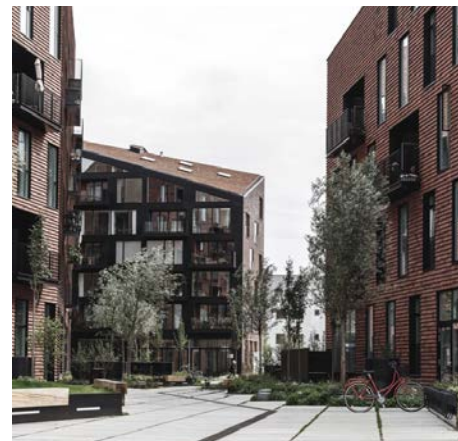
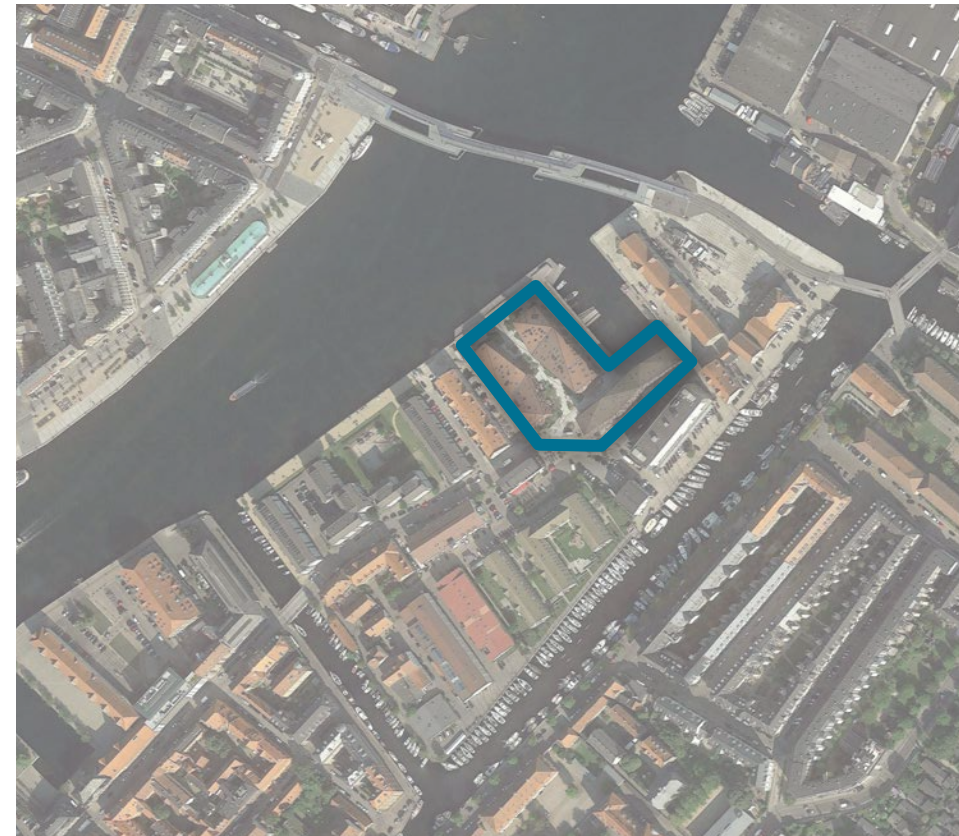
Dwelling Units per Acre: 50

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

#### 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)

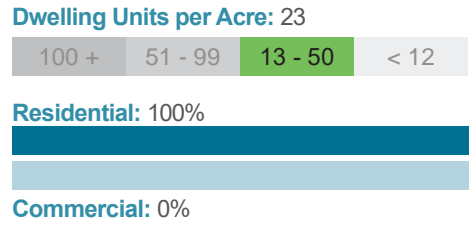
## TOD Precedents

### 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

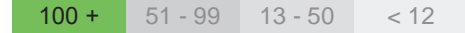
Number of Units: 150

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

Dwelling Units per Acre: 0



FAR: 1.2



Residential: 80%

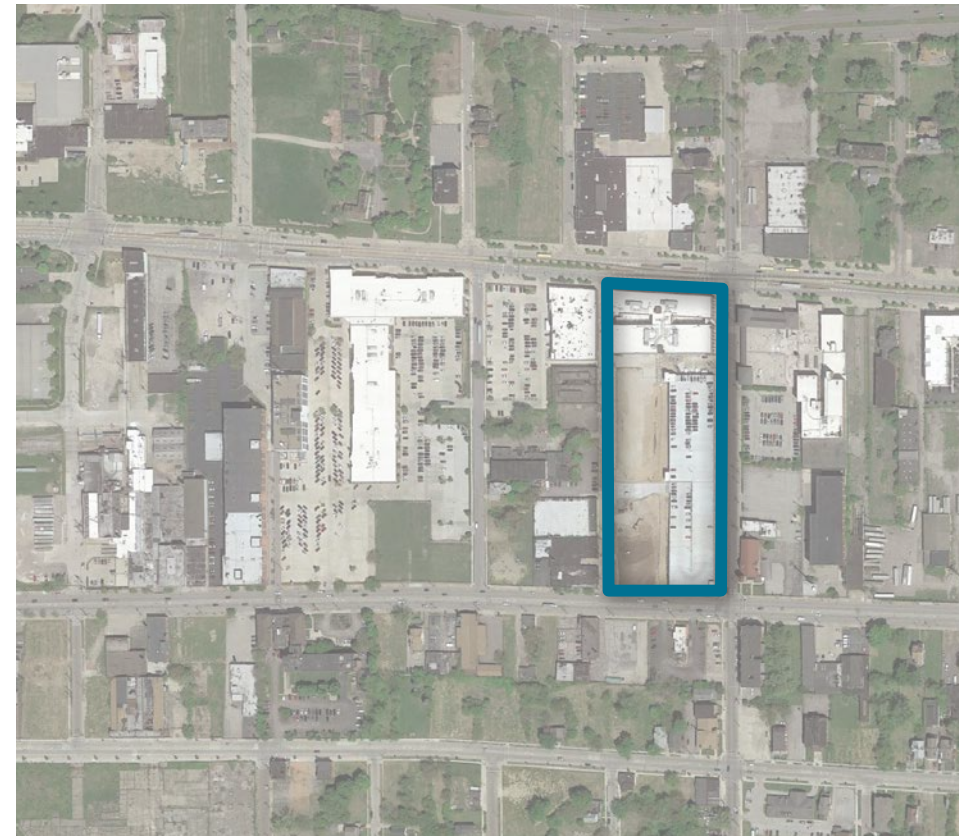


Commercial: 20%

### 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

100 +	51 - 99	13 - 50	< 12
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FAR: 0.5

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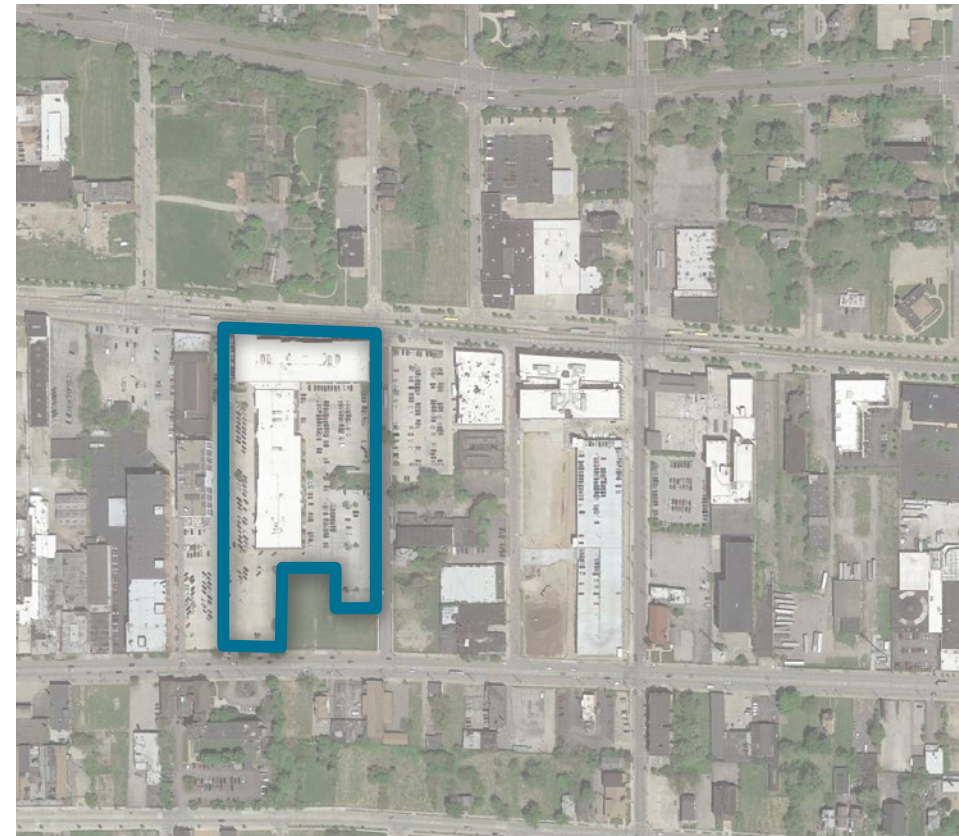
Residential: 0%



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)



### 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

Dwelling Units per Acre: 44



Residential: 100%

Commercial: 0%

### Project Features

Open Space: Courtyard



### 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

Year Completed: 2013

Montclair, California

**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



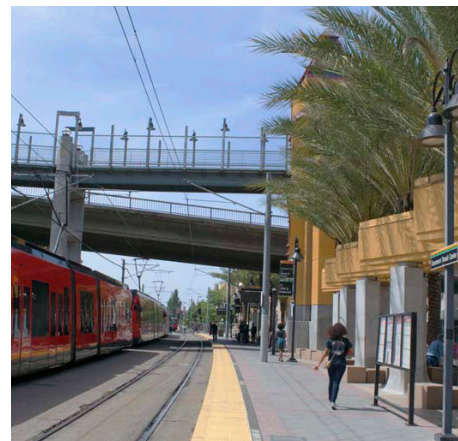
Residential: 99%



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

**Dwelling Units per Acre:** 47



**FAR:** 2.23



**Residential:** 88%



**Commercial:** 12%

### 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

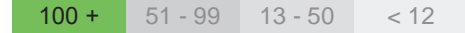
Number of Units: 232

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



II-C-E-47

### 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**

100 +	51 - 99	13 - 50	< 12
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**FAR: 1.9**

3.0 +	2.0 - 2.9	1.0 - 1.9	< 1
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**Residential: 100%**

100%			
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**Commercial: 0%**

0%			
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### 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

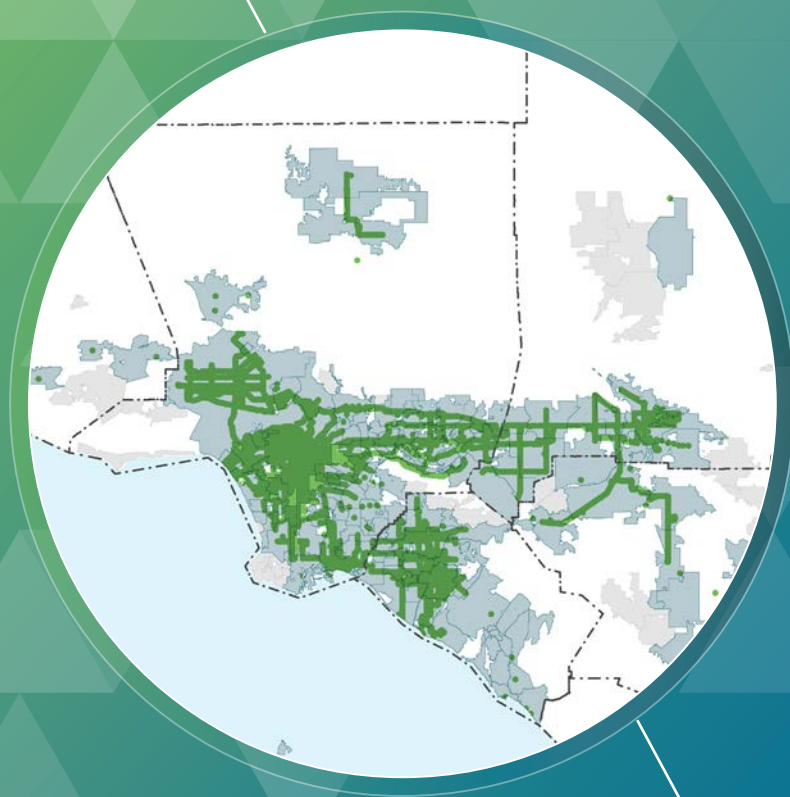
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## Additional Resources

Funding Sources

Additional Resources



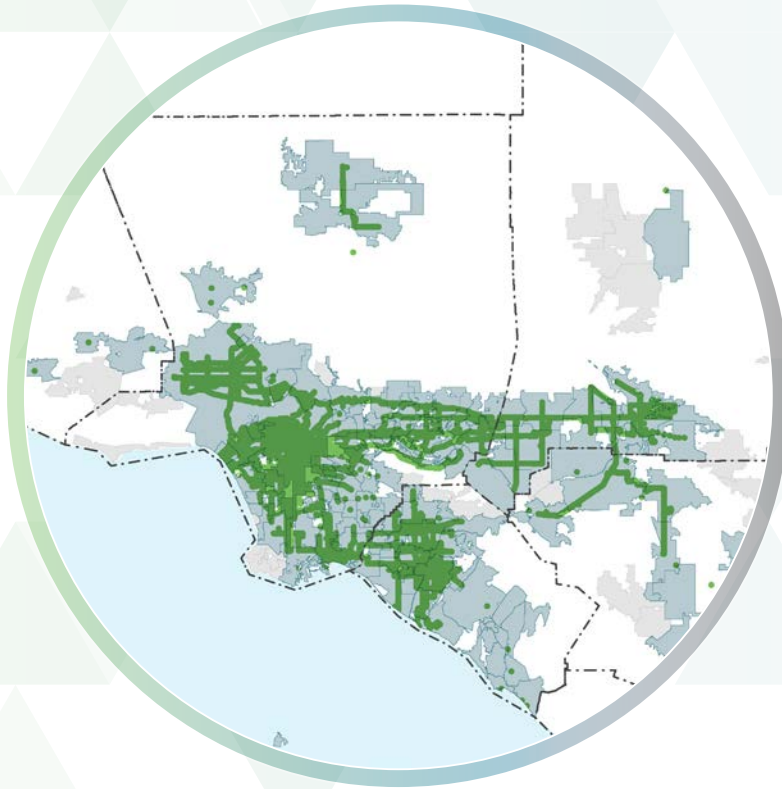
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# Part III

## Additional Resources

### A - FUNDING SOURCES



**Funding Source Categories**

**Summary of Funding Sources**

**Bicycle/Pedestrian Project Funding Sources**

**Urban Greening/Environmental Project Funding Sources**

**Parking and Transit Infrastructure Funding Sources**

**Major Developments Funding Sources - Economic Revitalization**

**Major Developments Funding Sources - Affordable Housing**

**District-wide Value Capture Mechanisms**

## Funding Source Categories

There is a wide variety of public and private funding sources and strategies that can be used to realize the TOD goals expressed in each HQTAs Vision Plan. The following pages include a list of some of these sources, grouped by the categories listed below:

- BP** Bicycle and Pedestrian
- UG** Urban Greening & Environmental
- PT** Parking and Transit Infrastructure
- ER** Major Developments (Economic Revitalization)
- AF** Major Developments (Affordable Housing)
- VC** District-wide Value Capture Mechanisms

For each Vision Plan, a tailored financial strategy with targeted funding sources is included to enable pilot project jurisdictions to focus on a specific set of sources. It is important to note that these funding sources can and often do change over time; funding programs may be canceled, new funding sources may become available, and funding availability may be decreased. There may also be new federal, state, and local resources available to cities in the coming years that could also be leveraged to implemented in each Vision Plan.

As future rounds of the HQTAs program move forward, this Toolkit will be continuously updated with additional funding sources.



## Summary of Funding Sources

Sources of Funding	Applicant	Disbursement Agency	Source	Funding Type	Process
<b>Bicycle/Pedestrian Project Funding Sources</b>					
<b>BP</b> Active Transportation Program (ATP)	Cities	Metropolitan Planning Orgs. (MPO)	CalTrans	Grant	Call for Projects
<b>BP</b> Measure M - Metro Active Transportation Program	Cities	LA Metro	Sales Tax	Discretionary Funds	Competitive
<b>BP</b> Local Returns Program (LA County)	Cities	LA Metro	Sales Tax	Grant	Formula
<b>BP</b> Transportation Development Act (Article 3)	Transit Agencies/City	LA Metro	Retail Sales Tax	Grant	Formula
<b>BP</b> Bicycle and Pedestrian Facilities Program SB-821	Local Jurisdictions	RCTC	LFT Funds	Grant	Call for Projects
<b>BP</b> Measure I - Local Streets	Cities	SBCTA	Sales Tax	Grant	Formula
<b>BP</b> Safe Routes to School	Cities/Counties	CalTrans	State+Federal	Grant	Competitive
<b>BP</b> Sustainable Transportation Planning Grant Program	Cities	MPOs	CalTrans	Planning Grant	Competitive
<b>BP</b> Surface Transportation Block Grant (FAST Act)	Cities	MPOs	FHWA	Grant	Formula
<b>BP</b> Congestions Mitigation and Air Quality Improvement Program (CMAQ)	Cities	MPOs	FHWA	Grant	Formula
<b>Urban Greening/Environmental Project Funding Sources</b>					
<b>UG</b> CalFIRE CCI Grants - Urban and Community Forestry Program	Cities	Dept. of Forestry and Fire Protection	CCI	Grant	Competitive
<b>UG</b> California Urban Greening Grant Program	Cities, Counties, others	California Natural Resources Agency	CCI	Grant	Competitive
<b>UG</b> Congestions Mitigation and Air Quality Improvement Program (CMAQ)	Cities	MPOs or State	FHWA	Grant	Formula
<b>UG</b> Community Development Block Grant (CDBG)	Cities/Developers	Cal. Dept. of Housing & Comm. Dev. (CAHCD)	US-HUD	Grant	Competitive
<b>UG</b> Affordable Housing and Sustainable Communities (AHSC) Program	Developers	CAHCD	Cap&Trade	Loan/Grant	Competitive
<b>UG</b> Infill Infrastructure Grant Program (IIG)	Developers	Cities	CAHCD	Grant	Competitive
<b>Parking and Transit Infrastructure Funding Sources</b>					
<b>PT</b> Proposition C - Transit Centers, Park-n-Ride	Developers	LA Metro	Sales Tax	Grant	Call for Projects
<b>PT</b> FTA Section - 5310, 5316, 5317 Programs	Transit Agencies/Cities	LA Metro	FTA	Grant	Competitive
<b>PT</b> BEYOND Framework Funds Program	Member Agencies	WRCOG		Grant	Formula
<b>PT</b> Local Transit Funds (LTF) Transportation Development Act (TDA) SB 325	Cities	Cities and counties	CalTrans	Grant	Discretionary
<b>PT</b> Cap and Trade - Transit and Intercity Rail Capital Program	Cities	MPOs, municipalities, counties	CalTrans	Grant	Call for Projects
<b>PT</b> Cap and Trade - Low Carbon Transit Operations Program (LCTOP)	Cities	Transit Agencies	CalTrans	Grant	Competitive
<b>PT</b> Buses and Bus Facilities Grant Program - 5339	Cities	Transit Agencies (Bus)	FTA	Grant	Formula/Competitive
<b>PT</b> Urbanized Area Formula Grants - 5307	Cities	MPOs and Transit Agencies	FTA	Capital/Planning Grant	Formula
<b>PT</b> California Infrastructure State Revolving Loan Fund (I-Bank)	Cities	Several (see details)	State of Cal	Financing	Rolling Applications
<b>PT</b> Transportation Infrastructure Finance and Innovation Act (TIFIA)	Cities	Several (see details)	USDOT	Financing/Guarantee	Rolling applications
<b>PT</b> Pilot Program for TOD Planning funded by CIG program	Cities	Cities, Local Govt., and Transit Ag.	FTA	Planning Grant	Competitive
<b>PT</b> Capital Investment Grant (Small Starts) - 5309	Cities	Transit Agencies	FTA	Grant	Discretionary

## Summary of Funding Sources

Sources of Funding	Applicant	Disbursement Agency	Source	Funding Type	Process
<b>Major Developments Funding Sources - Economic Revitalization</b>					
<b>ER</b> New Markets Tax Credit	Developer	Local Community Development Entities (CDEs)	US-Treasury	Financing	Competitive
<b>ER</b> Community Development Block Grant (CDBG)	Developers	Cities and Counties	US-HUD	Grant	Formula
<b>ER</b> CDBG - Section 108 Loan Guarantee Program	Cities	Local or State Government	US-HUD	Guarantee	Competitive
<b>ER</b> Historical Preservation Tools - Historic Rehabilitation Tax Credit	Developer	Cities	US Parks	Financing	Rolling Applications
<b>ER</b> California Infrastructure State Revolving Loan Fund (I-Bank)	Cities	Several (see details)	State of Cal	Financing	Rolling Applications
<b>ER</b> California Organized Investment Network (COIN)	Cities	Insurance companies	CA -Insurance	Financing	Rolling Applications
<b>ER</b> Choice Neighborhood	Cities/Developers	Local Government	US-HUD	Planning/Capital Grant	Competitive
<b>ER</b> LA County - TOD Planning Grant Program	Cities	LA Metro		Planning Grant	Call for Projects
<b>ER</b> EB-5 Immigration Visa Investment	Developer	Local Jurisdiction	USCIS	Financing	Rolling Applications
<b>ER</b> Public- Private Partnerships (P3)	Cities/Developers			Financing	
<b>ER</b> Joint Development Program	Cities/Developers	LA Metro		Financing	Competitive
<b>Major Developments Funding Sources - Affordable Housing</b>					
<b>AF</b> Low Income Housing Tax Credit (LIHTC) Program	Developers	California Tax Credit Allocation Authority (CTCAC)	US-Treasury	Financing	Competitive
<b>AF</b> Affordable Housing and Sustainable Communities (AHSC) Program	Developers	CAHCD	Cap&Trade	Loan/Grant	Competitive
<b>AF</b> HOME Investment Partnerships Program	Cities/Developers	CAHCD	US-HUD	Grant/Low-int Loan	Competitive
<b>AF</b> National Housing Trust Fund	Cities/Developers	CAHCD	US-HUD	Soft Loans	Competitive
<b>AF</b> Infill Infrastructure Grant Program (IIG)	Cities/Developers	CAHCD	US-HUD	Grant	Competitive
<b>AF</b> Multifamily Bond Financing	Developers	Los Angeles Community Development Commission (LACDC)		Financing	Competitive
<b>AF</b> Los Angeles County Housing Innovation Fund	Developers	LACDC		Financing	Competitive
<b>District-wide Value Capture Mechanisms</b>					
<b>VC</b> Transportation utility fees					
<b>VC</b> Parking Fees/Congestion Pricing					
<b>VC</b> Development Impact Fee					
<b>VC</b> Special Assessment District					
<b>VC</b> Enhanced Infrastructure Finance Districts					
<b>VC</b> Community Revitalization and Investment Authorities (CRIA)					
<b>VC</b> Debt Tools					



## Bicycle/Pedestrian Project Funding Sources

Sources of Funding	Overview	Criteria	Process	Considerations
<p><b>BP</b> <b>Active Transportation Program (ATP)</b>                      Applicant: Cities                      Disbursement Agency: MPOs                      Source: CalTrans                      Funding Type: Grant                      Process: Call for Projects</p>	<p>On September 26, 2013, Governor Brown signed legislation creating the Active Transportation Program (ATP) in the Department of Transportation (Senate Bill 99, Chapter 359 and Assembly Bill 101, Chapter 354). The ATP consolidates existing federal and state transportation programs, including the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SR2S), into a single program</p>	<p>Increase the proportion of trips accomplished by biking and walking; increase safety and mobility for non-motorized users; advance the active transportation efforts of regional agencies to achieve greenhouse gas (GHG) reduction goals, pursuant to SB 375 (Of 2008) and SB 341 (of 2009); Enhance public health; Ensure that disadvantaged communities fully share in the benefits of the program, and Provide a broad spectrum of projects to benefit many types of active transportation users.</p>	<p>40% to metropolitan planning organizations in urban areas with populations greater than 200,000, in proportion their relative share of population. 10%to small urban and rural regions with populations of 200,000 or less. 50%to projects awarded on competitive statewide basis.</p>	<p>Highly applicable for funding TOD-enabling infrastructure.</p>
<p><b>BP</b> <b>Measure M - Metro Active Transportation Program</b>                      Applicant: Cities                      Disbursement Agency: LA Metro                      Source: Sales Tax                      Funding Type: Discretionary Funds                      Process: Competitive</p>	<p>Approximately \$17 million of annual Measure M active transportation funding exists in the new Measure M 2% Active Transportation Program (2% ATP). A key reason Investing in Place and other advocates championed Measure M in 2016 was the creation of the first ever regional funding for walking, biking, vision zero, crosswalks and sidewalks.</p>	<p>Metro introduced a 2% ATP cash flow analysis, which essentially divided up the fund into four main categories: First/Last mile, LA River Bike Path, Bike Share, and Metro Bike and Pedestrian Programs. Each category includes funding allocations for the next five fiscal years.</p>	<p>The funding has been accounted for all the LA County regions. The active transportation projects will be funded through a competitive process and a local match.</p>	<p>Funding available in the near term.</p>
<p><b>BP</b> <b>Local Returns Program (LA County)</b>                      Applicant: Cities                      Disbursement Agency: LA Metro                      Source: Sales Tax                      Funding Type: Grant                      Process: Formula</p>	<p>The Proposition A, Proposition C and Measure R Local Return programs are three one-half cent sales tax measures approved by Los Angeles County voters to finance a countywide transit development program. By ordinance, LA Metro is responsible for administering the programs and establishing guidelines.</p>	<p>Over 50% of local return funds are invested in local public transit. In addition to funding transit services, cities use their Local Return funds to improve and maintain local streets. The Local Return Program also enables local governments to provide other essential local components of our overall transportation system, such as bus stops, park and ride lots, bicycle access, pedestrian access and safety and security.</p>	<p>Local Return funds are allocated and distributed monthly to jurisdictions on a "per capita" basis by Metro. Eligible expenditures are outlined in the Metro's Adopted Local Return Program Guidelines.</p>	
<p><b>BP</b> <b>Transportation Development Act (Article 3)</b>                      Applicant: Transit Agencies/Cities                      Disbursement Agency: LA Metro                      Source: Retail Sales Tax                      Funding Type: Grant                      Process: Formula</p>	<p>Transportation Development Act, Article 3 funds are used by cities within Los Angeles County for the planning and construction of bicycle and pedestrian facilities. A Local Transportation Fund (LTF) for each county derived from ¼ cent of the 7.25 cent statewide retail sales tax. The funds are apportioned to each county by the State Board of Equalization according to the amount of tax collected in the county.</p>	<p>TDA funds can be used for a wide variety of bike and pedestrian facilities such as right-of-way acquisition; construction costs, retrofitting bike and pedestrian amenities, route safety improvements, and bike infrastructure.</p>	<p>Local agencies may either draw down these funds or place them on reserve. Agencies must submit a claim form to LA Metro by the end of the fiscal year in which they are allocated. Failure to do so may result in the lapse of these allocations.</p>	

## Bicycle/Pedestrian Project Funding Sources

Sources of Funding	Overview	Criteria	Process	Considerations
<p><b>BP Bicycle and Pedestrian Facilities Program SB-821</b>                      Applicant: Transit Agencies/Cities                      Disbursement Agency: RCTC                      Source: Local Transportation Fund (LFT)                      Funding Type: Grant                      Process: Call for Projects</p>	<p>Each year 2% of the Local Transportation Fund (LTF) revenue is made available for use on bicycle and pedestrian facility projects through the Commission's SB 821 Program.</p>	<p>Eligible projects include sidewalks, access ramps, bicycle facilities, and bicycle plan development.</p>	<p>All of the cities and the county of Riverside are notified of the SB-821 program estimate of available funding and are requested to submit project proposals. An evaluation committee composed of the Technical Advisory Committee makes recommendations for projects and funding award amounts to the Commission for their final approval.</p>	
<p><b>BP Measure I - Local Streets</b>                      Applicant: Cities                      Disbursement Agency: SBCTA                      Source: Sales Tax                      Funding Type: Grant                      Process: Formula</p>	<p>Measure I is a half-cent sales tax collected throughout San Bernardino County for transportation improvements. In 2004, San Bernardino County voters overwhelmingly approved the extension of the Measure I sales tax through 2040.</p>	<p>Program receives 20% of revenue collected in the San Bernardino Valley Subarea, includes funds for local street repair and improvements. Program funds can be used flexibly for any eligible transportation purpose determined to be a local priority, including local streets, major highways, state highway improvements, freeway interchanges and other improvements to maximize the use of transportation facilities.</p>	<p>Funds distributed to cities and the County on a per capita basis. Annually each jurisdiction develops a Five Year Capital Improvement Plan for Local Streets Projects that is consistent with local, regional, and State transportation plans.</p>	<p>Funds are disbursed to local jurisdictions monthly upon receipt of the annually adopted Local Street Five Year Plan.</p>
<p><b>BP Safe Routes to School (State &amp; Federal)</b>                      Applicant: Cities/Counties                      Disbursement Agency: CalTrans                      Source: State (AB-57); Federal (MAP-21)                      Funding Type: Grant                      Process: Apportionment/Competitive</p>	<p>The program's aim is to increase the number of children who walk or bicycle to school by funding projects that remove the barriers that currently prevent them from doing so. Those barriers include lack of infrastructure, unsafe infrastructure, lack of programs that promote walking and bicycling through education/encouragement programs aimed at children, parents, and the community.</p>	<p>The SR2S program funds construction projects to improve the safety of students who walk or bike to school. Improvements must be made on public property. The facilities should include pedestrian facilities, traffic calming, traffic control devices, bike facilities, and public outreach.</p>	<p>Funds will be apportioned to each Caltrans District on the basis of student enrollment as determined by the California Department of Education.</p>	
<p><b>BP Sustainable Transportation Planning Grant Program</b>                      Applicant: Cities                      Disbursement Agency: MPOs and others                      Source: Caltrans (from FHWA)                      Funding Type: Planning Grant                      Process: Competitive</p>	<p>Strategic Partnership Program offers funding for transportation planning studies in partnership with CalTrans to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.</p>	<p>Planning goals include; 1) improve multimodal mobility and accessibility for all people; 2) preserve the multimodal transportation system; 3) support vibrant economy; 4) foster livable and healthy communities and promote social equity; and 5) practice environmental stewardship</p>	<p>CalTrans releases annual statewide notice of funding availability for planning grants which are available to MPOs.</p>	<p>Highly competitive program.</p>



## Bicycle/Pedestrian Project Funding Sources

Sources of Funding	Overview	Criteria	Process	Considerations
<p><b>BP</b> <b>Surface Transportation Block Grant (FAST Act)</b>                      Applicant: Cities                      Disbursement Agency: MPOs                      Source: FHWA (FAST Act)                      Funding Type: Grant                      Process: Formula</p>	<p>The STBG promotes flexibility in State and local transportation decisions and provides flexible funding to best address State and local transportation needs.</p>	<p>STBG funds cannot be used from local roads and collectors; but can be used for pedestrian and bike projects among many others.                      The STBG requires all the Surface Transportation Program eligibilities and in addition, requires states to create and operate an office to design, implement, and oversee P3 initiatives.</p>	<p>A percentage of a State's STBG apportionment (after set-asides for Transportation Alternatives) is to be obligated in the following areas in proportion to their relative shares of the State's population.</p>	<p>Funds allocated to MPOs based on population.</p>
<p><b>BP</b> <b>Congestions Mitigation and Air Quality Improvement Program (CMAQ)</b>                      Applicant: Cities                      Disbursement Agency: MPOs                      Source: FHWA (FAST Act)                      Funding Type: Grant                      Process: Formula</p>	<p>Funds may be used for a transportation project or program that is likely to contribute to the attainment or maintenance of a national ambient air quality standard, with a high level of effectiveness in reducing air pollution.</p>	<p>Funds may be used for transportation projects likely to contribute to the attainment or maintenance of a national ambient air quality standard, with a high level of effectiveness in reducing air pollution, and be included in the Metropolitan Planning Organization's (MPO's) current transportation plan and transportation improvement program (TIP) or the current state transportation improvement program (STIP) in areas without an MPO.</p>	<p>FAST Act directs FHWA to apportion funding as a lump sum for each State then divide that total among apportioned programs. Once each State's combined total apportionment is calculated, funding is set-aside for the State's CMAQ Program.</p>	<p>Improvement in air quality from project required.</p>

## Urban Greening/Environmental Project Funding Sources

Sources of Funding	Overview	Criteria	Process	Considerations
<p><b>UG</b> <b>Urban and Communities Forestry Grants Program</b>                      Applicant: Cities/Counties                      Disbursement Agency: Dept. of Forestry and Fire                      Source: CCI (from Cap&amp;Trade)                      Funding Type: Grant                      Process: Competitive</p>	<p>Through the California Climate Investments (CCI) Urban &amp; Community Forestry Grant Program, CAL FIRE works to optimize the benefits of trees and related vegetation through multiple-objective projects</p>	<p>These projects further the goals of the California Global Warming Solutions Act of 2006 (AB 32), result in a net greenhouse gas benefit, and provide environmental services and cost-effective solutions to the needs of urban communities and local agencies. Co-benefits of the projects include increased water supply, clean air and water, reduced energy use, flood and storm water management, recreation, urban revitalization, improved public health, and producing useful products such as bio-fuel, clean energy, and high quality wood.</p>		
<p><b>UG</b> <b>California Urban Greening Grant Program</b>                      Applicant: Cities/Counties                      Disbursement Agency: CA Natural Resources Agency                      Source: CCI (from Cap&amp;Trade)                      Funding Type: Grant                      Process: Competitive</p>	<p>This new program is a competitive program that supports projects that reduce GHG emissions by establishing and enhancing parks and open space; greening lands and structures; establishing green streets and alleyways; using natural solutions to improve air and water quality and reduce energy consumption; and creating more walkable and bikeable trails that enable residents to access work, schools and commercial centers without having to drive automobiles.</p>	<p>Eligible urban greening projects will reduce GHG emissions and provide multiple additional benefits, including, a decrease in air and water pollution or a reduction, conversion of an existing built environment into green space, incorporate green infrastructure solutions that improve sustainability.</p>	<p>The applicant is required to submit an application, which is evaluated by the state and projects are selected that are likely to make the maximum impact.</p>	
<p><b>UG</b> <b>Infill Infrastructure Grant Program (IIG)</b>                      Applicant: Developers                      Disbursement Agency: Cities                      Source: CAHCD                      Funding Type: Grant                      Process: Competitive</p>	<p>Funded by Proposition (Prop 1C) 1C, the Housing and Emergency Shelter Trust Fund Act of 2006, the primary goal is to promote infill housing development.</p>	<p>IIG is grant assistance, available as gap funding to infrastructure improvements required for specific residential or mixed-use infill development.                      IIG serves to aid in new construction and rehabilitation of infrastructure that supports higher-density affordable and mixed-income housing in locations designated as infill.</p>	<p>Funds are allocated through a competitive process, based on the merits of the individual infill projects and areas. Some of the application selection criteria includes housing density, project readiness, access to transit, proximity to amenities, and housing affordability.</p>	<p>Funding only for qualifying infill project</p>



## Parking and Transit Infrastructure Funding Sources

Sources of Funding	Overview	Criteria	Process	Considerations
<p><b>PT</b> <b>Proposition C - Transit Centers, Park-n-Ride</b>                      Applicant: Developers                      Disbursement Agency: LA Metro                      Source: Sales Tax                      Funding Type: Grant                      Process: Call for Projects</p>	<p>A voter-enacted (1990) ½-cent sales tax for public transit purposes.</p>	<p>Capital costs of transit centers including facilities, access improvements, landscaping, bike lockers, rehabilitation, and other amenities. Capital costs and rehabilitation of park-and-ride lots, including freeway bus stops incorporated into a transit center or park-and-ride lot, used exclusively by transit and ride-sharing patrons during normal working hours.</p>	<p>Funds flow to Metro which allocates to itself and other agencies according to the Metro Formula Allocation Procedure, the Metro Call for Projects, and Metro Board actions. A Funding Agreement (FA) is executed for each project in the Metro Call for Projects. These funds can be leveraged by bonding for capital projects.</p>	
<p><b>PT</b> <b>FTA Section - 5310, 5316, 5317 Programs</b>                      Applicant: Transit Agencies/Cities                      Disbursement Agency: LA Metro                      Source: FTA                      Funding Type: Grant                      Process: Competitive</p>	<p>Federal transit law, as amended by MAP-21, requires that projects funded under the Section 5310, Section 5316, and Section 5317 Programs are included in a locally developed, coordinated public transit-human services transportation plan. The 2016-2019 Coordinated Public Transit-Human Services Transportation Plan for Los Angeles County (“Coordinated Plan”) was formally adopted by the Metro Board of Directors in July 2015.</p>	<p>FTA grant programs include Section 5310 (Enhance Mobility of Seniors and Individuals with Disabilities Program ), Section 5316 (Job Access and Reverse Commute Program), and Section 5317 (New Freedom Program).</p>	<p>The solicitation is a competitive selection process that will result in the award of available federal grants apportioned by the Federal Transit Administration (FTA) to eligible agencies through Metro. Approved awards will be authorized by way of fully executed Funding Agreement by/between successful applicant and Metro.</p>	
<p><b>PT</b> <b>BEYOND Framework Funds Program</b>                      Applicant: Member Agencies                      Disbursement Agency: WRCOG                      Source:                      Funding Type: Grant                      Process: Formula</p>	<p>BEYOND is an economic development and sustainability local assistance funding program designed to enable member agencies to develop and implement plans and programs aimed at improving quality of life in Western Riverside County.</p>	<p>Agencies may ask request the funds: 1) To develop plans and/or implement projects; 2) To provide a match for grants and other funding opportunities; and 3) To pool resources with other member agencies for larger projects that affect economic development, water, education, environment, health, and transportation.</p>	<p>The BEYOND Core funding is a non-competitive, fixed amount of funding available to member agencies. Once approved of Core funding, members can apply for project-based funding.</p>	
<p><b>PT</b> <b>Local Transit Funds (LTF) Transportation Development Act (TDA) SB 325</b>                      Applicant: Cities                      Disbursement Agency: Cities and Counties                      Source: CalTrans                      Funding Type: Grant                      Process: Discretionary</p>	<p>Local Transportation Fund (LTF), is derived from a ¼ cent of the general sales tax collected statewide. The State Board of Equalization, based on sales tax collected in each county, returns the general sales tax revenues to each county’s LTF. Each county then apportions the LTF funds within the country based on population.</p>	<p>These funds can be used for transit capital expenditures, operations, or a combination thereof. Standard practice is LTF funds are assumed to be used for operations first, then as a local match for federally funded capital projects when State Transit Assistance (STA) funds can’t be used.</p>	<p>It is a three-step process: (1) apportionment, (2) allocation, and (3) payment. Annually, the Transportation Planning Agencies (TPAs) determine each area’s share of the anticipated LTF.</p>	<p>Allocation discretionary action by regional planning organization.</p>

## Parking and Transit Infrastructure Funding Sources

Sources of Funding	Overview	Criteria	Process	Considerations
<p><b>PT</b> <b>Cap and Trade - Transit and Intercity Rail Capital Program</b>                      Applicant: Cities                      Disbursement Agency: MPOs                      Source: CalTrans                      Funding Type: Grant                      Process: Call for Projects</p>	<p>The Transit and Intercity Rail Capital Program (TIRCP) to provide grants from the Greenhouse Gas Reduction Fund to fund transformative capital improvements that will modernize California's intercity, commuter, and urban rail systems, and bus and ferry transit systems to reduce emissions of greenhouse gases by reducing congestion and vehicle miles traveled throughout California.</p>	<p>Primary Criteria: Reduce GHG emissions; Increase ridership; Integrate the services of the State's various rail and transit operations; Improve safety.                      Secondary Criteria: Reducing VMT; Promoting housing development near transit; Improve area for more jobs and housing to increase locational efficiency; Expanding existing rail and public transit systems; Enhancing the connectivity, integration, and coordination of the State's various transit agencies; Implementing clean vehicle technology.</p>	<p>Apply to TIRCP call for projects.</p>	<p>Requires an EIR for high rating in the competitive process.</p>
<p><b>PT</b> <b>Cap and Trade - Low Carbon Transit Operations Program (LCTOP)</b>                      Applicant: Cities                      Disbursement Agency: Transit Agencies                      Source: CalTrans                      Funding Type: Grant                      Process: Competitive</p>	<p>The Low Carbon Transit Operations Program (LCTOP) is one of several programs that are part of the Transit, Affordable Housing, and Sustainable Communities Program established by the California Legislature in 2014 by Senate Bill 862.</p>	<p>The LCTOP was created to provide operating and capital assistance for transit agencies to reduce greenhouse gas emission and improve mobility, with a priority on serving disadvantaged communities.</p>	<p>(1) Lead agency must be listed on SCO letter.                      (2) Verify the project is in the list of eligible projects.                      (3) Verify project meets criteria.                      (4) Submit required documents requested in LCTOP guidelines.</p>	<p>Applicable for all transit projects. But needs commitment from other funding sources.</p>
<p><b>PT</b> <b>Buses and Bus Facilities Grant Program - 5339</b>                      Applicant: Cities                      Disbursement Agency: Transit Agencies (Buses)                      Source: FTA                      Funding Type: Grant                      Process: Competitive</p>	<p>The Bus &amp; Bus Facilities Infrastructure Investment Program makes federal resources available to states and direct recipients to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities including technological changes or innovations to modify low or no emission vehicles or facilities.</p>	<p>FTA will prioritize projects that demonstrate how they will address significant repair and maintenance needs, improve the safety of transit systems, deploy connective projects that include advanced technologies to connect bus systems with other networks and support the creation of ladders of opportunity.</p>	<p>Funds remain available for obligation for four fiscal years. This includes the fiscal year in which the amount is made available or appropriated plus two additional years.</p>	<p>Valley Transit authority and Metrolink could apply for this. Funding is provided through formula allocations and competitive grants.</p>
<p><b>PT</b> <b>Urbanized Area Formula Grants - 5307</b>                      Applicant: Cities                      Disbursement Agency: MPOs/Transit Agencies                      Source: FTA                      Funding Type: Capital/ Planning Grant                      Process: Formula</p>	<p>The Urbanized Area Formula Funding program makes federal resources available to urbanized areas and to governors for transit capital and operating assistance in urbanized areas and for transportation-related planning.</p>	<p>Funds are primarily used for operations and maintenance but can be used for capital projects, including the purchase of vehicles. Eligible activities include: planning, engineering, design and evaluation of transit projects and other technical transportation-related studies.</p>	<p>Funding is allocated via formulas. Funds requires a 20% local match.                      Future funds can potentially be bonded under the Certificate of Participation Program.</p>	



## Parking and Transit Infrastructure Funding Sources

Sources of Funding	Overview	Criteria	Process	Considerations
<p><b>PT</b> <b>California Infrastructure State Revolving Loan Fund (I-Bank)</b>                      Applicant: Cities                      Disbursement Agency: State of California                      Source:                      Funding Type: Financing                      Process: Rolling Application</p>	<p>The ISRF Program provides financing to public agencies and non-profit corporations sponsored by public agencies for a wide variety of infrastructure and economic development projects (excluding housing). ISRF Program funding is available in amounts ranging from \$50,000 to \$25 million, with loan terms for the useful life of the project up to a maximum of 30 years.</p>	<p>Applicant must demonstrate project readiness and feasibility to complete construction within 2 years after the I-Bank's financing approval. In this context, "complete a project" the portion of the project financed by the I-Bank must meet construction contract specifications for completeness and/or ability to operate.</p>	<p>Funding applications are continuously accepted. The I-Bank Board of Directors makes the financing decision. Examples of eligible sources of financing repayment includes: Enterprise/ Sewer Special Funds, leases of Borrower assets, property taxes or property-related assessments, voter-approved General Fund debt.</p>	<p>Financing option for project rather than funding source. All other funding sources must be committed prior to financing approval.</p>
<p><b>PT</b> <b>Transportation Infrastructure Finance and Innovation Act (TIFIA)</b>                      Applicant: Cities                      Disbursement Agency: Caltrans                      Source: USDOT                      Funding Type: Financing/Guarantee                      Process: Rolling Application</p>	<p>Strategic goal of the TIFIA is to leverage limited Federal resources and stimulate capital market investment in transportation infrastructure by providing credit assistance in the form of direct loans, loan guarantees, and standby lines of credit (rather than grants) to projects of national or regional significance.</p>	<p>The TIFIA credit program offers three distinct types of financial assistance – direct loans, loan guarantees, and standby lines of credits.                      Major criteria include creditworthiness; foster partnerships that attract public and private investment for the project; ability to proceed at an earlier date or reduced lifecycle costs; Reduces contribution of federal grant assistance to the project; construction contracting process can commence no more than 90 days from execution of a TIFIA credit instrument.</p>	<p>DOT reviews creditworthiness of project sponsor (sponsor must pay \$100,000) and then DOT may request oral presentation. DOT will evaluate and give recommendation to DOT Credit Council, DOT Credit Council makes recommendation to the Secretary. DOT will notify sponsor if project is approved. Project sponsor must satisfy all program requirements, DOT will issue term sheet, credit agreement, and will disburse funds.</p>	<p>Source of credit assistance, but needs a revenue source to service the debt payments. Applicable for Parking Structure/Districts.</p>
<p><b>PT</b> <b>Pilot Program for TOD Planning funded by CIG Program</b>                      Applicant: Cities                      Disbursement Agency: Caltrans                      Source: USDOT                      Funding Type: Planning Grant                      Process: Competitive</p>	<p>The Pilot Program for TOD Planning helps support FTA's mission of improving public transportation for America's communities by providing funding to local communities to integrate land use and transportation planning with a transit capital investment that is seeking or recently received funding through the Capital Investment Grant (CIG) Program.</p>	<p>Comprehensive planning funded through the program must examine ways to improve economic development and ridership, foster multimodal connectivity and accessibility, improve transit access for pedestrian and bicycle traffic, engage the private sector, identify infrastructure needs, and enable mixed-use development near transit stations.</p>	<p>Competitive funding application</p>	<p>MetroLink could apply for this. LA Metro got for WSAB corridor.</p>
<p><b>PT</b> <b>Capital Investment Grant (Small Starts) - 5309</b>                      Applicant: Cities                      Disbursement Agency: Transit Agencies                      Source: FTA                      Funding Type: Grant                      Process: Discretionary</p>	<p>This is FTA's primary grant program for funding major transit capital investments, including heavy rail, commuter rail, light rail, streetcars, and bus rapid transit. It is a discretionary grant program unlike most others in government.</p>	<p>Project Justification Criteria: Mobility improvements; Environmental benefits; Congestion relief; Cost-effectiveness; Economic development; Supportive land uses and land use policy.                      Financial Commitment Criteria: Current financial conditions of project operator; Commitment of funds; Financial capacity and reasonableness of assumptions.</p>	<p>Application to Small Starts required. Instead of an annual call for applications and selection of awardees by the Federal Transit Administration (FTA), the law requires that projects seeking CIG funding complete a series of steps over several years to be eligible for funding.</p>	<p>Highly competitive and requires commitment from other non-federal sources.</p>

## Major Developments Funding Sources - Economic Revitalization

Sources of Funding	Overview	Criteria	Process	Considerations
<p><b>ER</b> <b>New Markets Tax Credit</b>                      Applicant: Developer                      Disbursement Agency: Local CDEs                      Source: US-Treasury                      Funding Type: Financing                      Process: Competitive</p>	<p>The NMTC Program incentivizes community development and economic growth through the use of tax credits that attract private investment to distressed communities. The NMTC Program enables the Community Development Financial Institution (CDFI) to allocate tax credit authority to Community Development Entities (CDEs) through a competitive application process. CDEs use their authority to offer tax credits to investors in exchange for equity in the CDE. Using the capital from these equity investments, CDEs can make loans and investments to businesses operating in low-income communities on better rates and terms and more flexible features than the market.</p>	<p>The NMTC Program enables the Community Development Financial Institution (CDFI) to allocate tax credit authority to Community Development Entities (CDEs) through a competitive application process. Funding can be used only for commercial development such as manufacturing, food, retail, housing, health, technology, energy, education, and childcare.</p>	<p>NMTC process begins with applying for a CDE certification. Next, the CDE will need to apply to the current Allocation round, which typically begins in May and awards are announced in the winter of the same year. Once the awards are announced, the allocation agreement has to be closed. The final step is an ongoing reporting and compliance documentation.</p>	<p>Creating a separate entity is critical for accessing NMTC dollars.</p>
<p><b>ER</b> <b>Community Development Block Grant (CDBG)</b>                      Applicant: Developer                      Disbursement Agency: Cities and Counties                      Source: US-HUD                      Funding Type: Grant                      Process: Formula</p>	<p>The Community Development Block Grant (CDBG) is a flexible program that provides communities with resources to address a wide range of unique community development needs. The CDBG program works to ensure decent affordable housing, to provide services to the most vulnerable in our communities, and to create jobs through the expansion and retention of businesses.</p>	<p>Not less than 70 percent of CDBG funds must be used for activities that benefit low- and moderate-income persons. In addition, each activity must meet one of the following national objectives for the program: 1) benefit low- and moderate-income persons, 2) prevention or elimination of slums or blight, or 3) address community development needs having a particular urgency.</p>	<p>The annual CDBG appropriation is allocated between States and local jurisdictions based on a formula comprised of several measures of community need, including the extent of poverty, population, housing overcrowding, age of housing, and population growth lag in relationship to other metropolitan areas.</p>	<p>Directly disbursed to counties and cities based on formula.</p>
<p><b>ER</b> <b>CDBG - Section 108 Loan Guarantee Program</b>                      Applicant: Cities                      Disbursement Agency: Local Govt. or State                      Source: US-HUD                      Funding Type: Loan Guarantee                      Process: Competitive</p>	<p>Section 108 offers state and local governments the ability to transform a small portion of their Community Development Block Grant (CDBG) funds into federally guaranteed loans large enough to pursue physical and economic revitalization projects capable of revitalizing entire neighborhoods.</p>	<p>Source of financing for certain community development activities, such as housing rehabilitation, economic development, and large-scale physical development projects. All projects and activities must meet one of</p>	<p>The borrower will be required to secure the loan by pledging current or future CDBG allocations to either repay the loan or secure it. In addition, the borrower may be required to pledge additional security to the loan which may include property liens or other collateral.</p>	



## Major Developments Funding Sources - Economic Revitalization

Sources of Funding	Overview	Criteria	Process	Considerations
<p><b>ER</b> <b>Historical Preservation Tools - Historic Rehabilitation Tax Credit</b>                      Applicant: Developers                      Disbursement Agency: Cities                      Source: US Parks                      Funding Type: Financing                      Process: Rolling Application</p>	<p>The Federal Historic Rehabilitation Tax Credit program is administered by the National Park Service and the State Office of Historic Preservation.</p>	<p>The Federal Historic Preservation Tax Incentives Program encourages private investment in the re-use of historic buildings. The program provides for a 20% income tax credit for the rehabilitation of income-producing buildings that are “certified historic structures.” A smaller tax credit (10%) is available for non-certified buildings constructed before 1936.</p>	<p>Building owners must complete a three-part application process to qualify for the credit. In Part 1, the applicant verifies that the property is listed in or eligible for the National Register. Part 2 provides a description of the proposed work for approval, utilizing the Secretary of the Interior’s Standards for Rehabilitation. Part 3 compares the actual project work with the Part 2 description and verifies that the project has met the Standards.</p>	<p>Only applicable to income-producing properties.</p>
<p><b>ER</b> <b>California Organized Investment Network (COIN)</b>                      Applicant: Cities                      Disbursement Agency: Insurance Companies                      Source: CA Insurance                      Funding Type: Financing                      Process: Rolling Application</p>	<p>COIN is a collaborative effort between the California Department of Insurance, the insurance industry, and advocates for investments in low-income communities. This voluntary program facilitates insurance industry investments that benefit California’s environment and its low-to-moderate (LMI) income and rural communities.</p>	<p>COIN researches, sources, structures and certifies that investment in a wide range of innovative opportunities and deliver competitive rates of return. Investments must benefit California’s environment or its low-to-moderate income or rural communities through economic development, job creation, access to transit or healthcare or improvements in education.</p>	<p>COIN extensively researches investment opportunities for insurers and publishes Investment Bulletins for high impact or guided investments that are believed to be safe and solvent, offer competitive financial returns, and benefit California’s environment, LMI, and rural communities.</p>	<p>Attracts private investments for community economic development. Can be used for access to transit as well as healthcare and education-related development</p>
<p><b>ER</b> <b>Choice Neighborhood</b>                      Applicant: Cities/Developers                      Disbursement Agency: Local Government                      Source: US-HUD                      Funding Type: Capital/Planning Grant                      Process: Competitive</p>	<p>The Choice Neighborhoods program provides competitive Planning Grants and Implementation Grants to enable communities to revitalize struggling neighborhoods with distressed public housing or HUD-assisted housing through a comprehensive approach to neighborhood transformation.</p>	<p>Planning Grants enable local leaders to undertake a comprehensive planning process, working closely with housing residents, broader community members, businesses, and a range of local stakeholders. Implementation Grants support communities that have undergone a comprehensive planning process and are ready to implement their plans.</p>	<p>HUD established a mapping tool for the purposes of establishing neighborhood eligibility and to assign points for certain rating factors. This mapping tool will overlay the locally defined neighborhood boundaries with data associated with that area and estimate the rates of certain indicators in that neighborhood using a proportional allocation methodology.</p>	<p>It is competitive grant program. Notice of funding availability of announced each year. Applicants can apply for these grants.</p>

## Major Developments Funding Sources - Economic Revitalization

Sources of Funding	Overview	Criteria	Process	Considerations
<p><b>ER</b> <b>LA County - TOD Planning Grant Program</b>                      Applicant: Cities                      Disbursement Agency: LA Metro                      Source: Combination of various funds                      Funding Type: Planning Grant                      Process: Call for Projects</p>	<p>Metro is responsible for allocating discretionary federal, state and local transportation funds to improve all modes of surface transportation. Metro also prepares the Los Angeles County Transportation Improvement Program (TIP). A key component of TIP is the Call for Projects program, a competitive process that distributes discretionary capital transportation funds to regionally significant projects.</p>	<p>The eight modal categories of funding include regional surface transportation improvement, good movement improvements, signal synchronization and bus speed improvements, transportation demand management, bicycle improvements, pedestrian improvements, and transit capital.</p>	<p>Every other year, Metro accepts Call for Projects applications in eight modal categories. Metro staff ranks eligible projects and presents preliminary scores to Metro’s Technical Advisory Committee (TAC) and the Metro Board of Directors for review. Upon approval, the TIP is developed and formally transmitted to the regional and state transportation planning agencies. The TIP then becomes part of the five-year program of projects scheduled for implementation in Los Angeles County.</p>	
<p><b>ER</b> <b>EB-5 Immigration Visa Investment</b>                      Applicant: Developer                      Disbursement Agency: Local Jurisdiction                      Source: USCIS                      Funding Type: Financing                      Process: Rolling Application</p>	<p>The EB-5 program allows foreign nationals to achieve permanent residency with an investment that will create 10 new direct or indirect jobs in the United States per investor. These investments typically must be at least \$1 million, however in Targeted Employment Areas (TEA) with high unemployment, the minimum qualifying investments are \$500,000.</p>	<p>EB-5 funding would be particularly well suited to support new hospitality accommodations, educational facilities, medical facilities, or new offices, as these uses would support a number of new jobs.</p>	<p>Investment can be pooled into a regional investment center, through which a single project can be supported by multiple EB-5 investments, so long as the investment and employment thresholds are met. The only limit to the amount of money that may be invested is the number of jobs the new development will support.</p>	<p>The development needs to be financial attractive to attract investors.</p>
<p><b>ER</b> <b>Public- Private Partnerships (P3)</b></p>	<p>A public-private partnership is a contractual agreement between a public agency and a private-sector entity whereby “the skills and assets of each sector (public and private) are shared in delivering a service or facility for the use of the general public.</p>	<p>Typically, the private entity provides the capital cost to finance the project and the public agency offers concession leases. The private partner makes upfront or ongoing payments to the public partner in exchange for developing and operating the asset, in exchange for collecting the revenue generated by the asset. There are various forms of public private partnerships depending on the nature of the project’s risks and rewards.</p>	<p>P3s are typically large, complex projects such as transportation or social infrastructure</p>	<p>P3s are applicable for all types of projects. Procurement process is complex and require multiple advisors. It is an expensive process. Transaction costs especially are a cause of concern for smaller projects.</p>



## Major Developments Funding Sources - Economic Revitalization

Sources of Funding	Overview	Criteria	Process	Considerations
<p><b>ER</b> <b>Joint Development Program</b>                      Applicant: Developer                      Disbursement Agency: LA Metro and others                      Source:                      Funding Type: Financing                      Process: Call for Projects</p>	<p>Joint Development is the only value capture mechanisms commonly employed by transit agencies, since the FTA has guidelines that allow certain projects to use public funding.</p>	<p>It can take many forms, ranging from an agreement to develop land owned by the transit agency to joint financing and development of a larger project that incorporates both transit facilities and private development. A joint development agreement can include a cost-sharing agreement, a revenue sharing agreement, or a combination of the two.</p>		<p>JDs require complex financial transactions. The public sector needs advanced real estate knowledge to implement JDs.</p>

## Major Developments Funding Sources - Affordable Housing





Sources of Funding	Overview	Criteria	Process	Considerations
<p><b>AF</b> <b>Low Income Housing Tax Credit (LIHTC) Program</b>                      Applicant: Developers                      Disbursement Agency: CTCAC                      Source: US-Treasury                      Funding Type: Financing                      Process: Competitive</p>	<p>The LIHTC enables low-income housing sponsors and developers to raise project equity through the sale of tax benefits to investors. The program is regulated and administered by the Internal Revenue, which is part of the U.S. Treasury Department. Recognizing the extremely high cost of developing housing in California, the state legislature authorized a state low income housing tax credit program to augment the federal tax credit program.</p>	<p>Only rental housing projects are eligible for tax credits in both the federal and state programs. The programs have both rent and income restrictions. Under federal law, credit projects must remain affordable for at least 30 years; however, California law generally requires a 55-year extended use period for 9% tax credit projects.</p>	<p>Most credits are sold to corporate or individual investors through public or private syndication</p>	<p>This is a financing source that only affordable housing developers can apply for.</p>
<p><b>AF</b> <b>Affordable Housing and Sustainable Communities (AHSC) Program</b>                      Applicant: Developers                      Disbursement Agency: CAHCD                      Source: Cap&amp;Trade                      Funding Type: Loan/Grant                      Process: Competitive</p>	<p>AHSC funds land-use, housing, transportation, and land preservation projects to support infill and compact development that reduce greenhouse gas ("GHG") emissions. Funding for the AHSC Program is provided from the Greenhouse Gas Reduction Fund (GGRF), an account established to receive Cap-and-Trade auction proceeds.</p>	<p>Eligible activities include affordable housing development, housing-related infrastructure, sustainable transportation infrastructure, transportation-related amenities, and program costs.</p>	<p>Applicants must submit a concept proposal which will be reviewed by the Strategic Growth Committee (SGC) and the respective MPO to rank for priority projects. Priority applicants will be invited to submit a full application.</p>	<p>Highly competitive funding source.</p>
<p><b>AF</b> <b>HOME Investment Partnerships Program</b>                      Applicant: Developers/Cities                      Disbursement Agency: CAHCD                      Source: US-HUD                      Funding Type: Grant/Low Interest Loan                      Process: Competitive</p>	<p>Assist cities, counties, developers, including Native American Entities, and nonprofit community housing development organizations (CHDOs) to create and retain affordable housing.</p>	<p>Housing rehabilitation, new construction, and acquisition and rehabilitation, for both single-family and multifamily projects, and predevelopment loans to CHDOs. All activities must benefit lower-income renters or owners.</p>	<p>Grants are provided to cities and counties and low-interest loans are provided to developers. Most assistance is in the form of loans by city and county recipients to project developers to be repaid to local HOME accounts for reuse. Applications are invited through issuance of Notices of Funding Availability (NOFAs).</p>	<p>Funding for affordable housing for developers given to cities/counties.</p>
<p><b>AF</b> <b>National Housing Trust Fund (To be announced)</b>                      Applicant: Developers/Cities                      Disbursement Agency: CAHCD                      Source: US-HUD                      Funding Type: Soft Loans                      Process: Competitive</p>	<p>The National Housing Trust Fund (NHTF) is a new federal program administered in California by the Department of Housing and Community Development.</p>	<p>Assist in new construction of permanent housing for extremely low-income households through deferred payment loan or forgivable loans (soft loans).</p>	<p>Applications will be invited through the issuance of Notices of Funding Availability (NOFAs). NHTF will be paired with another State program in a joint NOFA.</p>	



## Major Developments Funding Sources - Affordable Housing



Sources of Funding	Overview	Criteria	Process	Considerations
<p><b>AF Multifamily Bond Financing</b>                      Applicant: Developers                      Disbursement Agency: LACDC                      Source:                      Funding Type: Financing                      Process: Competitive</p>	<p>The County issues tax-exempt bonds to finance low- and moderate-income housing for families.</p>	<p>The projects need to adhere to the Federal and state requirements for tax-exempt multifamily housing bonds. The developers need to set aside 20 percent of the units for low-income tenants.                      The projects must be located in unincorporated County of Los Angeles.</p>		
<p><b>AF Los Angeles County Housing Innovation Fund</b>                      Applicant: Developers                      Disbursement Agency: LACDC                      Source:                      Funding Type: Financing                      Process: Competitive</p>	<p>LACHIF II is a \$60 million revolving loan fund providing site acquisition and predevelopment financing for the development of affordable housing in the County of Los Angeles.</p>	<p>For creation of multifamily rental affordable housing located within the County of Los Angeles.</p>	<p>There are three originating lenders leverage LACDC's \$19.5 million to create this revolving loan fund.</p>	

## District-wide Value Capture Mechanisms

Sources of Funding	Overview	Criteria	Process	Considerations
 <b>Transportation utility fees</b>	Transportation utility fees are assessments on property that are designed to be closely related to transportation demand and can therefore spread the costs of financing local roads or other transportation services among users in a fashion that approximates a user fee	Transportation utility fees are most commonly used for roads, but they can also be used to provide a dedicated funding source for transit systems.	The fee can be a flat fee for each property, or it can apply a formula based on units of housing, number of parking spaces, or square footage. It can also be based on the estimated trip generation rate for a property type.	Does not require voter approval. Chiefly pays for O&M costs. Requires technical feasibility and financial feasibility to cover the construction and operation costs.
 <b>Parking Fees/Congestion Pricing</b>	Congestion pricing is a demand management strategy which allows pricing mechanisms to control demand for services such as parking during peak hours. Congestion pricing has been successfully implemented in several dense, urban core to reduce congestion and raise funds for transportation improvements.	The revenue from the congestion pricing can be used to cover the cost of the tolling system as well as improving transit systems. Typically, congestion pricing requires state legislation and/or voter approval.		
 <b>Development Impact Fee</b>	Development impact fees, system development charges, and connection or facility fees are charges assessed on new development to defray the cost to the jurisdiction of extending public services to the development and cannot be used to fund existing deficiencies.	Impact Fees cannot be used to upgrade existing deficiencies in infrastructure. Fee can be exacted only after establishing reasonable relationship of development impact and impact mitigation.	The fees are generally collected once and are used to offset the cost of providing public infrastructure such as streets and utilities.	
 <b>Special Assessment District</b>	<p>Special districts are considered a value capture tool because they capture the value (or benefit) generated by an improvement or service to provide funding for the improvement or service.</p> <p>Special districts, which can include (but are not limited to) business improvement districts (BIDs) and Special Assessment Districts (SADs).</p> <p>Requires voter approval.</p>	Assessment districts are formed to include a geographical area in which property owners or businesses agree to pay an assessment to fund a proposed improvement or service from which they expect to directly benefit. The amount of the assessment must be directly related to the cost of the improvement and the expected benefit to the property owner.	Special districts can be used either for pay-as-you-go improvements or to finance the issuance of bonds backed by the assessment revenue. Property owners in the district pay an additional tax or fee to pay for the service or improvement in the desired timeframe or to finance a debt obligation in accordance to the property's proportional share of the benefit.	Less risky for local governments since the risk is transferred to property owners. Difficult to implement across large geographies with multiple jurisdictions. Applicable to non-revenue generating infrastructure, however, the benefit generated for the property owners should be direct.



## District-wide Value Capture Mechanisms

Sources of Funding	Overview	Criteria	Process	Considerations
 <b>Enhanced Infrastructure Finance Districts</b>	<p>Cities, counties, and special districts can create EIFDs and issue TIF bonds (under special circumstances). An EIFD captures the incremental tax revenue generated by new development related to public capital improvement across multiple jurisdictions.</p> <p>Requires voter approval.</p>	<p>EIFDs can only capture tax revenue net of the moneys payable to school districts or educational funds, subject to approval from taxing authorities.</p> <p>An EIFD can finance traditional public works, as well as transportation, transit, parks and libraries, water and sewer facilities, solid waste disposal, and flood control and drainage. It can also be used for non-revenue generating projects such as bike and pedestrian amenities.</p>	<p>EIFDs are separate government entities, formed through a Joint Power Authority (JPA) consisting of cooperating cities, counties, and special districts. The new EIFD requires these entities to work together to make financing plans that combine a range of permitted funding sources, including tax increment bonds, that are the responsibility of all participants.</p>	<p>Obtaining approvals for EIFDs from tax authorities is challenging. Implementing and administering an EIFD can be complex.</p>
 <b>Community Revitalization and Investment Authorities (CRIA)</b>	<p>In 2015, Governor Jerry Brown signed a law enabling cities to establish CRIsAs, which enabled them to capture additional tax revenues for revitalization of neighborhoods. Redevelopment projects can be financed by bonds backed by future tax increment revenues derived from the project.</p>	<p>CRIsAs will be able to receive the tax increment on increased property taxes in a subject area with consent from taxing entities including the city, county, and special districts. Twenty-five percent of revenue from the tax increment must be allocated to Low- and Moderate-Income Housing Fund.</p>	<p>There are two ways to create a CRIA; 1) municipalities can directly establish an authority board; and 2) by signing a joint power agreement between city, county, and special districts. Restrictions apply to where CRIsAs can be established.</p>	<p>Creation of a CRIA needs to undergo a public hearing process and can be rejected if 50% of the owners and residents protest. Improved infrastructure in underserved communities</p>

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# Part III

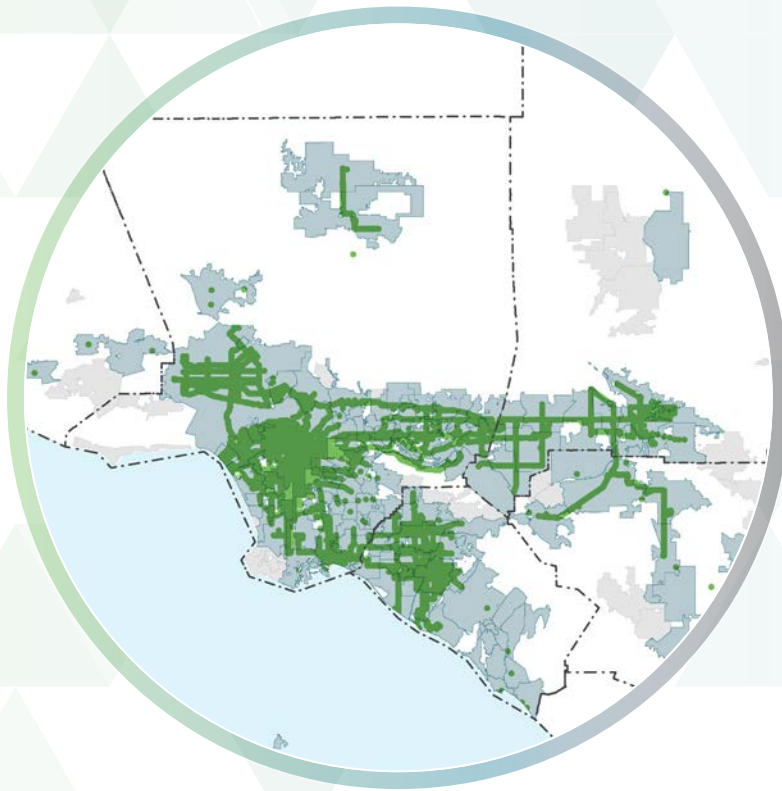
## Additional Resources

### B - ADDITIONAL RESOURCES

TOD Place Types - Table of Metrics

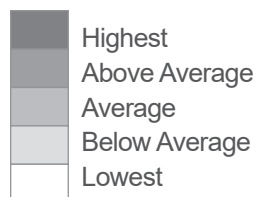
Station Survey Walking Tour

Glossary of Abbreviations



## HQTA Place Types

		Land Use Mix				Built Environment			
		Residential	Employment	Mixed Use	Civic / Open Space	Intersections per mi <sup>2</sup>	Average Floors	Floor Range	Total Net FAR
Urban	Urban Mixed Use	18%	16%	45%	21%	200	23	15 - 100	9.0
	Urban Commercial	4%	64%	12%	21%	200	18	15 - 100	6.0
	Urban Residential	64%	4%	12%	21%	200	15	5 - 60	9.0
City	City Mixed Use	28%	17%	35%	20%	200	7	3 - 40	3.4
	City Commercial	1%	82%	4%	14%	200	7	5 - 40	3.1
	City Residential	65%	4%	11%	20%	200	7	5 - 40	2.9
Town	Town Mixed Use	26%	20%	29%	25%	200	4	2 - 8	1.9
	Town Commercial	1%	69%	17%	14%	200	3	2 - 8	1.8
	Town Residential	68%	0%	10%	22%	220	3	2 - 8	1.2
Village / Suburban	Village Mixed Use	43%	14%	14%	28%	220	3	2 - 6	1.0
	Village Commercial	0%	61%	7%	32%	230	2	2 - 6	1.2
	Village Residential	74%	0%	1%	25%	180	3	2 - 5	0.9
	Suburban Multi-family	87%	0%	0%	13%	90	3	2 - 5	1.2
Special Districts	High Intensity Activity Center	14%	37%	41%	8%	130	5	5 - 40	2.5
	Industrial / Office / Residential Mixed High	58%	36%	0%	6%	60	4	1 - 17	2.0
	Office Focus	0%	82%	0%	18%	45	4	2 - 9	1.1
	Campus / University	32%	2%	0%	66%	150	8	3 - 17	1.7



Note for color shading: For Land Use Mix, Residential Mix, and Employment Mix, color shading is based on land use percentage on 100 point scale; for Built Environment and Average Density per Acre, color shading is based on value for each place type as a percentage of the highest score for each category (e.g. For the Average Floors category, the highest number of floors is 23. The shading for 18 average floors would be 18 / 23 = 78% of shading for 23 floors.)



Average Density per Acre			Residential Mix			Employment Mix		
Households	Employees	Households + Employees	Single Family	Townhouse / Live-Work	Multi-family	Office	Retail	Industrial
85	266	351	0%	0%	100%	80%	20%	0%
8	402	410	0%	0%	100%	93%	7%	0%
131	44	175	0%	0%	100%	22%	78%	0%
44	85	129	0%	3%	97%	60%	40%	0%
4	200	204	0%	0%	100%	77%	23%	0%
58	14	72	0%	3%	97%	40%	60%	0%
21	50	71	0%	0%	100%	75%	25%	0%
5	75	80	0%	0%	100%	68%	32%	0%
18	12	30	0%	47%	53%	47%	53%	0%
10	14	24	30%	29%	41%	42%	58%	0%
2	40	42	0%	0%	100%	49%	51%	0%
10	2	12	52%	48%	0%	100%	0%	0%
32	2	34	0%	11%	89%	85%	15%	0%
24	69	93	0%	6%	94%	20%	80%	0%
45	42	87	0%	4%	96%	73%	16%	11%
0	65	65	0%	0%	0%	93%	2%	5%
31	22	53	0%	0%	100%	64%	36%	0%

## Station Survey Walking Tour

After analyzing the HQT A area through mapping and analysis, the next step in defining the station area is a micro-level analysis of the individual blocks, street, buildings, and other individual physical elements in the half-mile station area. To understand these elements from their impact towards facilitating pedestrian activity between land uses and transit, this analysis is best completed as a survey during a walking tour. Metro developed a station survey as part of the First-Last Mile Strategic Plan to begin to assess areas of intervention. The station surveys, “Mainly qualitative, measure performance of each station/stop area. With the end goal of increasing transit ridership and user comfort, urban design elements that are most important for rider comfort and system function” are the focus of the station survey. Parts of the Metro station survey, as well as portions of other station surveys from research of best practices, comprise the station survey below. The format of the developed checklist is broad, and touches upon a range of issues faced by most station areas in the SCAG Region. The survey is organized to broadly assess the following categories: land use, mobility, safety, aesthetics/urban design, and accessibility. Each question is scored on a 1 - 5 scale.

Excellent	5 - 4
Good	3.99 - 3
Fair	2.99 - 2
Poor	1.99 - 1

	Disagree/ Lacking		Somewhat/ Adequate		Agree/ Ample
<b>Land Use</b>					
<b>1. Mix of uses:</b> Different uses that attract different people throughout the day, and week.	1	2	3	4	5
<b>2. Limited Vacancy:</b> There are no, or few empty storefronts.	1	2	3	4	5
<b>3. Few auto-oriented uses:</b> Commercial uses are not mostly located behind surface parking lots.	1	2	3	4	5
<b>4. Location of commercial uses:</b> Retail is concentrated near major arterials and near major transit stops/stations.	1	2	3	4	5
<b>5. Convenient retail:</b> Uses to serve transit users and residents (e.g. grocery, coffee, etc.)	1	2	3	4	5
				<b>Total Points</b>	_____

<b>Pedestrian Amenities and Legibility</b>					
<b>6. Adequate Lighting:</b> Lighting is regularly spaced and directed towards sidewalks/bikeways.	1	2	3	4	5
<b>7. Eyes on the street:</b> Windows, balconies, and entries face the street and public spaces.	1	2	3	4	5
<b>8. Well-maintained public realm:</b> No/minimal litter, trimmed vegetation, sidewalks in good condition.	1	2	3	4	5
<b>9. Buffer for bikes:</b> Bikes are adequately separated from vehicles.	1	2	3	4	5
<b>10. Buffer for pedestrians:</b> Pedestrians are adequately separated from vehicles e.g. by street trees, pedestrian amenities, and infrastructure.	1	2	3	4	5
<b>11. Pedestrian appropriate traffic speeds:</b> Slow traffic due to narrow roads; drivers yield to pedestrians.	1	2	3	4	5
<b>12. Clear traffic signage:</b> Traffic signage is easy to see for vehicles, bikes, and pedestrians.	1	2	3	4	5
<b>13. Overall, the station feels comfortable:</b> The area is perceived as safe for all users: women, children, elderly, etc.	1	2	3	4	5
				<b>Total Points</b>	_____



## Station Survey Walking Tour

	Disagree/ Lacking		Somewhat/ Adequate		Agree/ Ample
<b>Urban Design</b>					
<b>14. Sense of place:</b> Unique street characteristic, landmarks, and activity that sets space apart.	1	2	3	4	5
<b>15. Pleasant landscaping:</b> Well-maintained and frequent street trees that provides ample shade.	1	2	3	4	5
<b>16. Pedestrian amenities:</b> Variety of and frequent pedestrian amenities for rest and activity.	1	2	3	4	5
<b>17. Building orientation and frontage:</b> Entrances oriented to sidewalks, buildings built to sidewalk edge; buildings encourage transit access.	1	2	3	4	5
<b>18. Architectural features and design:</b> Visually appealing building design, materials, elements.	1	2	3	4	5
<b>19. Active frontage and transparency:</b> Avoid blank walls along sidewalks, active first-floor uses.	1	2	3	4	5
<b>20. Pleasant walking environment:</b> There is a inviting and interesting experience for all users.	1	2	3	4	5
					Total Points ____
<b>Accessibility</b>					
<b>21. Sidewalks:</b> Sidewalks are wide enough to accommodate range of uses and multiple users.	1	2	3	4	5
<b>22. Clear, safe crossings:</b> Intersections allow ample time to cross, are frequent, and ADA accessible.	1	2	3	4	5
<b>23. Seamless transit mode transfer:</b> Different modes in close proximity connected by clear paths.	1	2	3	4	5
<b>24. Wayfinding signage:</b> Clear view for pedestrians and bikes, provides clear information/direction.	1	2	3	4	5
<b>25. Parking and pick-up / drop-off:</b> Adequate number of spaces, separated from pedestrians.	1	2	3	4	5
<b>26. Navigating public realm is easy and intuitive:</b> Multiple pathways accessible to all users.	1	2	3	4	5
					Total Points ____
<b>Mobility / Connectivity</b>					
<b>27. Street design prioritizes transit, bikes, and pedestrians:</b> Street lanes for vehicles are minimal and narrow to encourage slow speed, separated facilities for bus, bikes, and pedestrians.	1	2	3	4	5
<b>28. Transit station connectivity:</b> Transit station(s) is/are clearly visible from major roadways, and have clear signage indicating routes and transfer opportunities.	1	2	3	4	5
<b>29. Vehicle parking:</b> Vehicle parking is hidden behind buildings or underground.	1	2	3	4	5
<b>30. Car share / Bike share:</b> Car share and bike share stations are present within the station area.	1	2	3	4	5
					Total Points ____

Total Survey Points \_\_\_\_ /30 = Average Survey Points \_\_\_\_

## Glossary of Abbreviations

- AMI** Area Median Income
- BRT** Bus Rapid Transit
- CBD** Central Business District
- CTOD** Center for Transit-Oriented Development
- du/ac** Dwelling Units per Acre
- FAR** Floor-Area Ratio
- GHG** Greenhouse gas
- HQTA** High Quality Transit Area
- HSR** High Speed Rail
- HRT** Heavy Rail Transit
- LIHTC** Low Income Housing Tax Credit
- LRT** Light Rail Transit
- RTP/SCS** Regional Transportation Plan / Sustainable Community Strategy
- SCAG** Southern California Association of Governments
- SB** Senate Bill
- TOC** Transit-oriented community
- TOD** Transit-oriented development
- VMT** Vehicle miles travel

## Additional Resources

- 2016-2040 Regional Transportation Plan / Sustainable Communities Strategy**  
SCAG
- Buffalo Green Code: Unified Development Ordinance**  
City of Buffalo
- First-Last Mile Strategic Plan: Path Planning Guidelines**  
Metro
- Toolkit for Transit-Oriented Development Grants**  
Metropolitan Council
- TOD 203 - Transit Corridors and TOD: Connecting the Dots**  
CTOD
- Transit Supportive Planning Toolkit, 2015**  
Metro
- Urban Footprint Technical Summary: Model Version 1.0**  
Calthorpe Associates
- Urban Street Design Guide**  
National Association of City Transportation Officials (NACTO)
- Transit Design Guidelines**  
Omnitrans, 2013
- The Arrive Corridor**  
Gruen Associates, 2015
- Complete Street Design Guide**  
City of Los Angeles
- Long Beach Downtown and TOD Pedestrian Master Plan**  
Gruen Associates